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# INDEX SUMMARY

## NEW CHICAGO BUILDING CODE

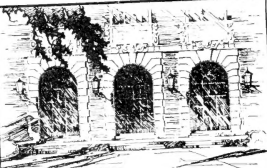
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INDEX SUMMARY *of the New*  
CHICAGO BUILDING CODE  
WITH COMPLETE CROSS REFERENCES

*Compiled by*

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DEPARTMENT OF BUILDINGS, CITY OF CHICAGO

SINCE 1914

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FOREWORD

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No member of the Department of Buildings of the City of Chicago, and no member of any other department of the City of Chicago has had any hand, directly or indirectly, in the compilation of this Index Summary. No part of this Index, therefore, can be considered in any sense as any official wording or interpretation of the Building Code. Such wording or interpretation as contained in the Index is solely the responsibility of the author. His experience as Plan Examiner, Department of Buildings, City of Chicago, since 1914, has fitted him to know the needs of architects, engineers, and builders, and it is believed, to satisfy those needs with the first adequate index of any Chicago Building Code.

Since it is inevitable that errors and ambiguities should creep into this tremendously detailed work, the author will appreciate any notice of such errors or discrepancies. It should be noticed, however, that many apparent errors are due to conflicts in the code itself and not to the Index.

This Index Summary does not include:—

The Electrical Code

The Fire Prevention Code

Chapter 83 Water Supply and Distribution Systems

Chapter 84 Steam Boilers and Unfired Pressure Vessels

Chapter 85 Mechanical Refrigeration

The Zoning Ordinance

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# INDEX

## TO THE

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This covers all general and miscellaneous items on buildings and structures of all kinds. It should be referred to first if the class of use or type of building is not known, or if it is uncertain in what chapter the item under consideration properly belongs.

#### OCCUPANCY CHAPTERS INDEX SUMMARIES:

These include complete detailed indexes of the individual chapters mentioned below. Each is a specialized index for a particular class or group of related occupancies and should be used for design purposes. Such chapters can be used as a "check list" to insure that all Code requirements of a specialized character are complied with.

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## GENERAL INDEX



# GENERAL INDEX

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## Width, same as stairs.....

## Width: 3 ft. 8 in. in clear, min.....

## Windows, openings, etc., prohibited.....

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CHAPTER 49  
INSTITUTIONAL BUILDINGS



# REPORT OF THE SIXTH CENSUS OF THE POPULATION OF THE UNION OF SOUTH AFRICA, 5th MAY, 1936.

## VOLUME IV—LANGUAGES.

### ERRATA.

Subsequent to the publication of Volume IV. Languages—of the report on the Census of 1936, certain errors resulting from confusion between "Official Language" and "Home Language" in the figures relating to the Asiatic Population were discovered. The particulars in the subjoined tables should therefore be substituted for the figures appearing in Tables 16, 17, and 19.

TABLE 16.—OFFICIAL LANGUAGES SPOKEN—  
ASIATICS.

	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Both.....	86	408	79	486	165	492	818	326	734	284	1,532	305
English.....	172	536	437	1,774	969	2,989	2,989	11,961	2,691	10,451	5,693	11,191
Afrikaans.....	111	126	117	127	228	126	447	178	1,494	5621	888	175
Neither.....	6,438	7345	6,780	7373	13,227	7345	13,678	5357	14,494	5621	28,172	5340
Unspecified.....	1,694	1925	1,786	1940	3,180	1932	7,126	2843	7,423	2879	11,549	2861
TOTAL—Under 7 Years.....	8,801	10000	9,208	10000	18,009	10000	23,068	10000	25,786	10000	50,854	10000

### UNION—UNIE.

	Kinders Onder Skoolgaande Leeftyd.											
Beide.....	305	1,532	284	734	284	1,532	305	1,532	284	734	284	1,532
Engels.....	11,191	5,693	10,451	2,691	10,451	5,693	11,191	5,693	10,451	2,691	10,451	5,693
Afrikaans.....	175	888	5621	1,494	5621	888	175	888	5621	1,494	5621	888
Green van Beide.....	5340	28,172	5340	14,494	5621	28,172	5340	28,172	5340	14,494	5621	28,172
Onge spesifiseer.....	2861	11,549	2879	7,423	2879	11,549	2861	11,549	2879	7,423	2879	11,549
TOTAAL—Onder 7 Jaar.....	10000	50,854	10000	25,786	10000	50,854	10000	50,854	10000	25,786	10000	50,854

### NATAL.

	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Both.....	33	40	34	39	67	39	151	71	121	55	272	63
English.....	460	553	125	485	885	518	2,595	1216	2,317	1050	4,912	1131
Afrikaans.....	6,350	7629	6,702	7657	13,052	7644	13,041	6108	13,815	6260	26,856	6185
Neither.....	1,480	1778	1,592	1819	3,072	1799	5,558	2603	5,814	2631	11,372	2619
TOTAL—Under 7 Years.....	8,323	10000	8,753	10000	17,076	10000	21,349	10000	22,070	10000	43,419	10000

### Children Under School Age.

Both.....  
English.....  
Afrikaans.....  
Neither.....  
Unspecified.....  
TOTAL—Under 7 Years.....

### Kinders Onder Skoolgaande Leeftyd.

Beide.....  
Engels.....  
Afrikaans.....  
Green van Beide.....  
Onge spesifiseer.....  
TOTAAL—Onder 7 Jaar.....

# VERSLAG OOR DIE SESDE SENSUS VAN DIE BEVOLKING VAN DIE UNIE VAN SUID-AFRIKA, 5 MEI 1936.

## BOEKDEEL IV—TALE.

### ERRATA.

Na die publikasie van Boekdeel IV—Tale—van die verslag oor die Sensus van 1936 is seker foute as gevolg van verwarring tussen "Offisiële Taal" en "Huistaal" in die syfers ten opsigte van die Asiatische Bevolking ontdek. Die besonderhede in newensgaande tabelle moet derhalwe die syfers vervang wat in Tabelle 16, 17, en 19 voorkom.

TABEL 16.—OFFISIËLE TALE WAT GEpraat WORD—  
ASIATIE.

	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Beide.....	305	1,532	284	734	284	1,532	305	1,532	284	734	284	1,532
Engels.....	11,191	5,693	10,451	2,691	10,451	5,693	11,191	5,693	10,451	2,691	10,451	5,693
Afrikaans.....	175	888	5621	1,494	5621	888	175	888	5621	1,494	5621	888
Green van Beide.....	5340	28,172	5340	14,494	5621	28,172	5340	28,172	5340	14,494	5621	28,172
Onge spesifiseer.....	2861	11,549	2879	7,423	2879	11,549	2861	11,549	2879	7,423	2879	11,549
TOTAAL—Onder 7 Jaar.....	10000	50,854	10000	25,786	10000	50,854	10000	50,854	10000	25,786	10000	50,854

### Children Under School Age.

Both.....  
English.....  
Afrikaans.....  
Neither.....  
Unspecified.....  
TOTAL—Under 7 Years.....

### Kinders Onder Skoolgaande Leeftyd.

Beide.....  
Engels.....  
Afrikaans.....  
Green van Beide.....  
Onge spesifiseer.....  
TOTAAL—Onder 7 Jaar.....

VOLUME IV LANGUAGES.

ERRATA.

Subsequent to the publication of Volume IV Languages of the report on the Census of 1936, certain errors resulting from confusion between "Official Language" and "Home Language" in the figures relating to the Asiatic Population were discovered. The particulars in the subjoined tables should therefore be substituted for the figures appearing in Tables 16, 17, and 19.

TABLE 16.—OFFICIAL LANGUAGES SPOKEN ASIATIC.

Province and District.	Official Languages Spoken.
Provincie en Distrik.	Offisiële Tale wat Gepraat word.

PAGE—BLADSY 132.

Islands.	Both—Beide.		English—Engels.		Afrikaans.		Unspecified—Ongepaas.	
	No.	%	No.	%	No.	%	No.	%
	86	1.08	79	.96	165	.02	618	3.26
	111	1.36	117	1.37	298	1.20	2,407	12.16
	135	1.65	137	1.63	335	1.35	2,417	11.78
	158	1.95	158	1.95	395	1.58	3,178	15.45
	181	2.23	179	2.21	430	1.73	3,450	16.40
	204	2.54	204	2.54	495	1.98	3,950	19.25
	227	2.83	227	2.83	555	2.22	4,380	21.10
	250	3.12	250	3.12	615	2.46	4,950	23.85
	273	3.40	273	3.40	675	2.68	5,368	25.78
	296	3.68	296	3.68	735	2.90	5,668	27.36
	319	3.96	319	3.96	795	3.12	5,968	28.74
	342	4.24	342	4.24	855	3.36	6,268	29.92
	365	4.52	365	4.52	915	3.58	6,568	30.30
	388	4.80	388	4.80	975	3.80	6,868	31.68
	411	5.08	411	5.08	1,035	4.02	7,168	33.06
	434	5.36	434	5.36	1,095	4.24	7,468	34.44
	457	5.64	457	5.64	1,155	4.46	7,768	35.82
	480	5.92	480	5.92	1,215	4.68	8,068	37.20
	503	6.20	503	6.20	1,275	4.90	8,368	38.58
	526	6.48	526	6.48	1,335	5.12	8,668	39.96
	549	6.76	549	6.76	1,395	5.34	8,968	41.34
	572	7.04	572	7.04	1,455	5.56	9,268	42.72
	595	7.32	595	7.32	1,515	5.78	9,568	44.10
	618	7.60	618	7.60	1,575	6.00	9,868	45.48
	641	7.88	641	7.88	1,635	6.22	10,168	46.86
	664	8.16	664	8.16	1,695	6.44	10,468	48.24
	687	8.44	687	8.44	1,755	6.66	10,768	49.62
	710	8.72	710	8.72	1,815	6.88	11,068	50.00
	733	9.00	733	9.00	1,875	7.10	11,368	51.38
	756	9.28	756	9.28	1,935	7.32	11,668	52.76
	779	9.56	779	9.56	1,995	7.54	11,968	54.14
	802	9.84	802	9.84	2,055	7.76	12,268	55.52
	825	10.12	825	10.12	2,115	7.98	12,568	56.90
	848	10.40	848	10.40	2,175	8.20	12,868	58.28
	871	10.68	871	10.68	2,235	8.42	13,168	59.66
	894	10.96	894	10.96	2,295	8.64	13,468	61.04
	917	11.24	917	11.24	2,355	8.86	13,768	62.42
	940	11.52	940	11.52	2,415	9.08	14,068	63.80
	963	11.80	963	11.80	2,475	9.30	14,368	65.18
	986	12.08	986	12.08	2,535	9.52	14,668	66.56
	1,009	12.36	1,009	12.36	2,595	9.74	14,968	67.94
	1,032	12.64	1,032	12.64	2,655	9.96	15,268	69.32
	1,055	12.92	1,055	12.92	2,715	10.18	15,568	70.70
	1,078	13.20	1,078	13.20	2,775	10.40	15,868	72.08
	1,101	13.48	1,101	13.48	2,835	10.62	16,168	73.46
	1,124	13.76	1,124	13.76	2,895	10.84	16,468	74.84
	1,147	14.04	1,147	14.04	2,955	11.06	16,768	76.22
	1,170	14.32	1,170	14.32	3,015	11.28	17,068	77.60
	1,193	14.60	1,193	14.60	3,075	11.50	17,368	78.98
	1,216	14.88	1,216	14.88	3,135	11.72	17,668	80.36
	1,239	15.16	1,239	15.16	3,195	11.94	17,968	81.74
	1,262	15.44	1,262	15.44	3,255	12.16	18,268	83.12
	1,285	15.72	1,285	15.72	3,315	12.38	18,568	84.50
	1,308	16.00	1,308	16.00	3,375	12.60	18,868	85.88
	1,331	16.28	1,331	16.28	3,435	12.82	19,168	87.26
	1,354	16.56	1,354	16.56	3,495	13.04	19,468	88.64
	1,377	16.84	1,377	16.84	3,555	13.26	19,768	89.02
	1,400	17.12	1,400	17.12	3,615	13.48	20,068	90.40
	1,423	17.40	1,423	17.40	3,675	13.70	20,368	91.78
	1,446	17.68	1,446	17.68	3,735	13.92	20,668	93.16
	1,469	17.96	1,469	17.96	3,795	14.14	20,968	94.54
	1,492	18.24	1,492	18.24	3,855	14.36	21,268	95.92
	1,515	18.52	1,515	18.52	3,915	14.58	21,568	97.30
	1,538	18.80	1,538	18.80	3,975	14.80	21,868	98.68
	1,561	19.08	1,561	19.08	4,035	15.02	22,168	99.06
	1,584	19.36	1,584	19.36	4,095	15.24	22,468	100.00
	1,607	19.64	1,607	19.64	4,155	15.46	22,768	100.00
	1,630	19.92	1,630	19.92	4,215	15.68	23,068	100.00
	1,653	20.20	1,653	20.20	4,275	15.90	23,368	100.00
	1,676	20.48	1,676	20.48	4,335	16.12	23,668	100.00
	1,699	20.76	1,699	20.76	4,395	16.34	23,968	100.00
	1,722	21.04	1,722	21.04	4,455	16.56	24,268	100.00
	1,745	21.32	1,745	21.32	4,515	16.78	24,568	100.00
	1,768	21.60	1,768	21.60	4,575	17.00	24,868	100.00
	1,791	21.88	1,791	21.88	4,635	17.22	25,168	100.00
	1,814	22.16	1,814	22.16	4,695	17.44	25,468	100.00
	1,837	22.44	1,837	22.44	4,755	17.66	25,768	100.00
	1,860	22.72	1,860	22.72	4,815	17.88	26,068	100.00
	1,883	23.00	1,883	23.00	4,875	18.10	26,368	100.00
	1,906	23.28	1,906	23.28	4,935	18.32	26,668	100.00
	1,929	23.56	1,929	23.56	4,995	18.54	26,968	100.00
	1,952	23.84	1,952	23.84	5,055	18.76	27,268	100.00
	1,975	24.12	1,975	24.12	5,115	18.98	27,568	100.00
	1,998	24.40	1,998	24.40	5,175	19.20	27,868	100.00
	2,021	24.68	2,021	24.68	5,235	19.42	28,168	100.00
	2,044	24.96	2,044	24.96	5,295	19.64	28,468	100.00
	2,067	25.24	2,067	25.24	5,355	19.86	28,768	100.00
	2,090	25.52	2,090	25.52	5,415	20.08	29,068	100.00
	2,113	25.80	2,113	25.80	5,475	20.30	29,368	100.00
	2,136	26.08	2,136	26.08	5,535	20.52	29,668	100.00
	2,159	26.36	2,159	26.36	5,595	20.74	29,968	100.00
	2,182	26.64	2,182	26.64	5,655	20.96	30,268	100.00
	2,205	26.92	2,205	26.92	5,715	21.18	30,568	100.00
	2,228	27.20	2,228	27.20	5,775	21.40	30,868	100.00
	2,251	27.48	2,251	27.48	5,835	21.62	31,168	100.00
	2,274	27.76	2,274	27.76	5,895	21.84	31,468	100.00
	2,297	28.04	2,297	28.04	5,955	22.06	31,768	100.00
	2,320	28.32	2,320	28.32	6,015	22.28	32,068	100.00
	2,343	28.60	2,343	28.60	6,075	22.50	32,368	100.00
	2,366	28.88	2,366	28.88	6,135	22.72	32,668	100.00
	2,389	29.16	2,389	29.16	6,195	22.94	32,968	100.00
	2,412	29.44	2,412	29.44	6,255	23.16	33,268	100.00
	2,435	29.72	2,435	29.72	6,315	23.38	33,568	100.00
	2,458	30.00	2,458	30.00	6,375	23.60	33,868	100.00
	2,481	30.28	2,481	30.28	6,435	23.82	34,168	100.00
	2,504	30.56	2,504	30.56	6,495	24.04	34,468	100.00
	2,527	30.84	2,527	30.84	6,555	24.26	34,768	100.00
	2,550	31.12	2,550	31.12	6,615	24.48	35,068	100.00
	2,573	31.40	2,573	31.40	6,675	24.70	35,368	100.00
	2,596	31.68	2,596	31.68	6,735	24.92	35,668	100.00
	2,619	31.96	2,619	31.96	6,795	25.14	35,968	100.00
	2,642	32.24	2,642	32.24	6,855	25.36	36,268	100.00
	2,665	32.52	2,665	32.52	6,915	25.58	36,568	100.00
	2,688	32.80	2,688	32.80	6,975	25.80	36,868	100.00
	2,711	33.08	2,711	33.08	7,035	26.02	37,168	100.00
	2,734	33.36	2,734	33.36	7,095	26.24	37,468	100.00
	2,757	33.64	2,757	33.64	7,155	26.46	37,768	100.00
	2,780	33.92	2,780	33.92	7,215	26.68	38,068	100.00
	2,803	34.20	2,803	34.20	7,275	26.90	38,368	100.00
	2,826	34.48	2,826	34.48	7,335	27.12	38,668	100.00
	2,849	34.76	2,849	34.76	7,395	27.34	38,968	100.00
	2,872	35.04	2,872	35.04	7,455	27.56	39,268	100.00
	2,895	35.32	2,895	35.32	7,515	27.78	39,568	100.00
	2,918	35.60	2,918	35.60	7,575	28.00	39,868	100.00
	2,941	35.88	2,941	35.88	7,635	28.22	40,168	100.00
	2,964	36.16	2,964	36.16	7,695	28.44	40,468	100.00
	2,987	36.44	2,987	36.44	7,755	28.66	40,768	100.00
	3,010	36.72	3,010	36.72	7,815	28.88	41,068	100.00
	3,033	37.00	3,033	37.00	7,875	29.10	41,368	100.00
	3,056	37.28	3,056	37.28	7,935	29.32	41,668	100.00
	3,079	37.56	3,079	37.56	7,995	29.54	41,968	100.00
	3,102	37.84	3,102	37.84	8,055	29.76	42,268	100.00
	3,125	38.12	3,125	38.12	8,115	29.98	42,568	100.00
	3,148	38.40	3,148	38.40	8,175	30.20	42,868	100.00
	3,171	38.68	3,171	38.68	8,235	30.42	43,168	100.00
	3,194	38.96	3,194	38.96	8,295	30.64	43,468	100.00
	3,217	39.24	3,217	39.24	8,355	30.86	43,768	100.00
	3,240	39.52	3,240	39.52	8,415	31.08	44,068	100.00
	3,263	39.80	3,263	39.80	8,475	31.30	44,368	100.00
	3,286	40.08	3,286	40.08	8,535	31.52	44,668	100.00
	3,309	40.36	3,309	40.36	8,595	31.74		

TABLE 19.—HOME LANGUAGES SPOKEN—ASIATICS.

TABLE 19.—HUISTALE WAT GEPRAAAT WORD—ASIATIE.

PAGE—BLADSY 166.

HOME LANGUAGES—HUISTALE.															Geslag.	
Sex.	Tamil.	Hindi.	Telugu.	Gujarati.	Urdu.	Other	Chinese.	Japanese.	European	Other.	Uns.	Under 21.	21 +	Total.		
						Indian.		Sinese.	Japanese.			European		Under.		Onges.
UNION—UNIE.																
Urban.....	M.	27,190	18,838	8,008	12,882	6,870	1,422	1,701	130	2,359	107	276	43,144	36,548	79,692	M. Stedelik.
	F.	24,031	16,371	7,100	8,371	5,292	1,012	901	19	1,875	63	207	41,039	24,803	65,902	V.
	P.	51,821	35,209	15,108	21,253	12,171	2,434	2,602	149	4,234	170	483	84,183	61,411	145,594	P.
Rural.....	M.	16,380	12,953	5,091	2,576	1,032	1,045	57	1	237	24	63	22,507	10,952	30,459	M. Plattelands.
	F.	14,487	11,603	4,539	1,885	954	918	21	—	176	15	40	22,453	12,185	34,638	V.
	P.	30,867	24,556	9,630	4,461	1,986	1,963	78	1	413	39	103	44,960	23,137	74,097	P.
TOTAL.....	M.	43,570	31,791	13,099	15,458	7,911	2,467	1,758	131	2,496	131	339	65,651	53,500	119,151	M. TOTAAL.
	F.	38,518	27,974	11,639	10,256	6,246	1,939	982	19	2,051	78	247	63,482	37,048	100,540	V.
	P.	82,088	59,765	24,738	25,714	14,157	4,397	2,740	150	4,547	209	586	129,143	90,548	219,691	P.

CAPE—KAAP.

Urban.....	M.	1,168	730	52	1,123	1,019	512	670	17	1,324	26	128	2,446	4,028	6,474	M. Stedelik.
	F.	1,026	269	15	565	310	31	406	16	945	11	70	2,069	1,653	3,724	V.
	P.	2,194	999	67	1,693	1,329	543	1,076	33	2,169	37	198	4,515	5,683	10,198	P.
Rural.....	M.	44	35	—	23	16	—	8	—	65	3	9	79	124	203	M. Plattelands.
	F.	27	8	—	7	5	3	2	—	55	—	2	69	34	107	V.
	P.	69	43	—	30	21	3	10	—	120	3	11	148	162	310	P.
TOTAL.....	M.	1,212	765	52	1,151	1,035	512	678	17	1,389	29	137	2,525	4,152	6,677	M. TOTAAL.
	F.	1,051	277	15	572	315	34	408	16	1,000	11	72	2,138	1,693	3,831	V.
	P.	2,263	1,042	67	1,723	1,350	546	1,086	33	2,289	40	209	4,663	5,845	10,508	P.

TABEL 19. HUISTALE WAT GEPRAAAT WORD -ASIATE.

1897 160.

PAGES—HUISTALE.

Japanees.	European Languages.	Other.	Uns.	Under 21.	21 +	Total.	Gezag.
Japanees.	Europees Tale.	Ander.	Onges.	Onder 21.		Totaal.	

INIE.

130	2,259	107	270	43,144	38,548	79,692	M. Stedelik.
19	1,875	63	207	41,039	24,863	65,902	V.
149	4,134	170	483	84,183	61,411	145,594	P.
1	237	24	63	22,507	16,952	39,459	M. Plattelands.
1	176	15	40	22,453	12,185	34,638	V.
1	413	39	103	44,960	29,137	74,097	P.
131	2,496	131	339	65,651	53,500	119,151	M. TOTAAL.
19	2,051	78	247	63,492	37,048	100,540	V.
150	4,547	209	586	129,143	90,548	219,691	P.

AAP.

17	1,224	26	128	2,446	4,028	6,474	M. Stedelik.
16	945	11	70	2,069	1,655	3,724	V.
33	2,169	37	198	4,515	5,683	10,198	P.
—	65	3	9	79	124	203	M. Plattelands.
—	55	—	2	69	34	107	V.
—	120	3	11	148	162	310	P.
17	1,289	29	137	2,525	4,152	6,677	M. TOTAAL.
16	1,000	11	72	2,138	1,693	3,831	V.
33	2,289	40	209	4,663	5,845	10,508	P.

# INDEX SUMMARY

## CHAPTER 49

### INSTITUTIONAL BUILDINGS

**Includes the following: Generally with medical care:—**

Childrens' home	Medical unit
Day nursery	Nursery
Home for the blind	Old people's home
Hospital	Orphan asylum
Infirmary	Sanitarium
Insane asylum	

Get Commissioner of Buildings ruling, when no medical or surgical care is involved.

**Amphitheatre, teaching: See Teaching Amphitheatre**

**Anaesthetizing rooms and equipment:—**

Cylinders containing gases	49-34
Doors	49-17
Electric connections and grounding	49-34
General	49-33
Warning signs	49-35

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Anchors, joist, required every 7 ft. of wall. 73-50

Annual inspection. 46-1 to 46-7

**Area limits:—**

1 story, not sprinkler equipped	62-7
Over 1 story, not sprinkler equipped	62-7
Sprinklered, 100% area increase	62-8

**Assembly rooms:—**

Defined	49-2
Exits, 30 in. per 100 capacity	49-15
General, conform to building	49-8
Separations	63-6

**Bearing on wood stud partition prohibited** 67-51

**Bond, Masonry:—**

2 headers per sq. ft.	73-43
Every sixth course a header course	73-43
Faced walls, anchors required	73-45

**Capacity:—**

Assembly room	49-2
General	62-2 62-3 49-2

**Ceiling height:—**

Nurses' home in institutional building	49-11
Sleeping room, 9 ft. 6 in. min.	49-11

**Construction:—**

Fireproof required, more than 7 stories or 80 ft. 49-5

**Semi-fireproof required:—**

More than 1 story and basement, up to 7 stories or 80 ft. high. 49-6

Ordinary or Heavy Timber required, 1 story or less. 49-7

3 hr. construction over basement. 49-7

Porches, 1 story wood permitted. 49-9

**Separations from:—**

Assembly room, 2 hr. construction	63-6
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Multiple dwelling, 2 hr. construction	63-3c
Open air assembly unit, 4 hr. construction	63-3c
Public assembly unit, 4 hr. construction	63-3c
Single dwelling, 2 hr. construction	63-3c

See Multiple Occupancy

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**Defined** 40-5

**Doors:—**

Construction, certain rooms. 49-17

**Doors:—(Cont.)**

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Open out.....	49-27
Outside, 2 min., within 90 ft. of any point on floor.....	49-26
Revolving doors allowed as extras only.....	49-27
Sleeping room, min. width, 3 ft. 8 in. between jambs.....	49-16
Width: No leaf more than 4 ft. wide.....	49-27

**Electric wiring, independent for each use..... 63-5****Exits:—**

Based on capacity.....	49-15
Corridors from patients rooms.....	49-15
Court, 10 ft. min. width.....	49-26
Doors, construction:—	
Outside.....	49-27
Sleeping room, 3 ft. 8 in. between jambs.....	49-16
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CHAPTER 50  
BUSINESS UNITS



# INDEX SUMMARY

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# INDEX SUMMARY

## CHAPTER 51

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CHAPTER 52  
GARAGES



# INDEX SUMMARY

## CHAPTER 52

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CHAPTER 53

THEATRES



# INDEX SUMMARY

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Doorway approach to auditorium.....	53-47
Foyer approach to auditorium.....	53-47
Lobby approach to auditorium.....	53-47
Passageway approach to auditorium.....	53-47

## Defined as every:—

Ramp and enclosed spaces leading to public normal horizontal exit connection.....	53-47
Stairway and enclosed spaces leading to public normal horizontal exit connection.....	53-47

## Exits, Public Normal Vertical:—

## Balconies:—

2 vertical exits at least required.....	53-62
Entrance direct from balcony, or.....	53-62
Entrance direct from lobby or foyer at highest level of balcony.....	53-62
Lead to horizontal exit on main floor.....	53-62
Located at opposite sides of auditorium.....	53-62
90° max. horizontal exit connection.....	53-62
Width, min. 4 ft.....	53-63
Height, min. 7 ft.....	53-57
Mezzanines: Same as Balconies above.....	53-50

Obstructions prohibited.....	53-50
------------------------------	-------

## Exits, Public Normal Vertical:—(Cont.)

## Proscenium boxes:—

- At least 1 required. . . . . 53-62
- Entrance direct from 3 ft. door, aisle, or passage. . . . . 53-62
- Lead to main floor of auditorium. . . . . 53-62

## Stairways with direct balcony or mezzanine entrance:—

- 1 hr. separation from auditorium. . . . . 53-64
- Except: Vomitory may be open. . . . . 53-64

## Stairways with entrance from balcony, lobby or foyer:—

- Open in foyer and lobby. . . . . 53-64
- 2 hr. separation required in other parts. . . . . 53-64

## Stairs with entrance from mezzanine, lobby, or foyer:—

- Open in foyer and lobby. . . . . 53-64
- 2 hr. separation required in other parts. . . . . 53-64

## Width: 20 in. per 100 persons. . . . . 53-63

- 3 ft. min., general. . . . . 53-50

- 4 ft. min. from balconies. . . . . 53-63

- 4 ft. min. from mezzanines. . . . . 53-63

- At least 37½% of total width from either ½ of seating level. . . . . 53-63

## See also Stairways

## Exits, Ramps:—

- Aisle, main floor: Slope max. 1 in 6. . . . . 53-58

- Aisle, transverse above main floor, 1 in 12. . . . . 53-57

- As emergency exit. . . . . 53-48

- Exit court: Slope max. 1 in 6. . . . . 53-85

- Highest point main floor aisle to entrance, max. slope 1 in 12. . . . . 53-26

- Level landing, 4 ft. min., emergency exit doorway. . . . . 53-82

- Public emergency exit, max. slope, 1 in 6. . . . . 53-81

- Substitute for stairs, max. slope 1 in 6. . . . . 53-106

- Transverse aisle above main floor, 1 in 12. . . . . 53-57

- Vomitaries, max. slope 1 in 6. . . . . 53-61

## Exits, Stairways:—

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- Curved: Radius, min. 5 ft. . . . . 53-101

- Cut: 9½ in. min., 1 ft. out. . . . . 53-101

- Measured tangent to curve. . . . . 53-101

- Cut, min. 10 in. . . . . 64-31

- Except: Curved stairs, 9½ in., 1 ft. out. . . . . 53-101

- Fire escapes: In lieu of emergency stairs. . . . . 53-107 53-80

## Gridiron:—

- 1 may be winding or spiral. . . . . 53-98

- Extend to roof, or

- Extend to doorway near ceiling. . . . . 53-98

- Non-combustible material required. . . . . 53-98

- Penthouse construction: Same as building. . . . . 53-98

- Penthouse door, 45 min. . . . . 53-98

- Penthouse window, Type A. . . . . 53-98

## Handrails:—

- Extend to front edge of 3rd tread. . . . . 64-34

- Height: 2 ft. 6 in. min., front of tread. . . . . 64-34

- Height: 3 ft. max. at front of tread. . . . . 64-34

- Intermediate required, stairs over 7 ft. wide. . . . . 64-34

- May be wood. . . . . 53-24 53-99

- Newel post, 5 ft. high, required at ends of intermediate handrails. . . . . 64-34

- One required on each side of public stairs. . . . . 53-102

- Turned to wall at ends. . . . . 64-34

## Inclosure:—

- General. . . . . 64-28

- Normal stairs. . . . . 53-64

- Emergency stairs, 2 hr. construction. . . . . 53-79

- Non-combustible, except handrails. . . . . 53-99

- Non-required: Provisions same as for required stairs. . . . . 53-105

- Penthouse, employees gridiron stairs. . . . . 53-98

- Ramps: Same applicable requirements as stairs. . . . . 53-106

- See Exits, Ramps

- Rise, max. 7½ in. . . . . 64-31

<b>Exits, Stairways:—(Cont.)</b>	
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Width: Employees stairs, 2 ft. 6 in. min.....	53-103
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Allowed.....	53-44
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3 ft. max. at front of tread.....	64-34
Intermediate required, stairs over 7 ft. wide.....	64-34
May be wood.....	53-24 53-99
Newel post, 5 ft. high, required at ends of intermediate handrails.....	64-34
One required on each side of public stairs.....	53-102
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Show all seats	53-10
Show clear width of exits	53-10
Principal entrance:—	
Defined	53-1
Slope, max. 1 in 12	53-1
Steps prohibited	53-26
Projection block:—	
Alterations to comply in existing theatres	53-5
Doors in stage block: Non-combustible	53-23
Equipment: Projectors	53-161
Shelves, furniture, etc.	53-162
Film storage: In metal containers	53-163
One day's supply only	53-33
Finish and fixtures: Non-combustible, or	53-24
covered with non-combustible material	53-33
Handrails on stairs may be wood	53-24
Remodeling to comply in existing theatres	53-5
Separations: 2 hr. construction required	53-20
Type A windows required	53-20
Shelving, etc. to be non-combustible	53-162
Storage of combustibles prohibited	53-33
Except: 1 day's run of films	53-33
Toilets required, when more than 1 projector is installed	53-37
See also Projection Room	
Projection room:—	
Area, 50 sq. ft. for each device	53-33
Ceiling height, 8 ft. min.	53-33
Defined as room containing projector	53-1
Equipment permitted	53-33
Fixtures, furniture, trim, etc. to be non-combustible	53-24
Not required with acetate cellulose film	53-161
Not required with non-flammable film	53-161
Not required with slow-burning film	53-161
Not required with still pictures	53-161
One day's film storage allowed	53-33
Openings to have automatic shutters	53-33
Sliding shutter construction	53-33
Storage of films prohibited	53-33
Except: 1 day's supply	53-33
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Proscenium, defined	40-1
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Annual inspection fee	46-8
Air space, 5 in. min.	53-137
Approval of installations	53-159
Asbestos curtains prohibited when:	
Proscenium opening is over 22 ft. high	53-134
Proscenium opening is over 28 ft. wide	53-134
Cables and rigging	53-147 to 53-151
Certification of inspection and approval	53-159
Combustible material prohibited	53-136
Coverings	53-141
Counterweights	53-148
Design and construction	53-136
Frames: Framework	53-138
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**Proscenium Fire Curtain: Type 2 Stage:—(Cont.)**

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Public rooms: Exit other than entrance required.....	53-45	53-92	53-93
Provided: Room area is over 100 sq. ft..	53-45	53-92	53-93
Group of rooms, area over 300 sq. ft...	53-45	53-92	53-93

**Ramps: See Exits, Ramps**

Red lights prohibited generally.....			53-178
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Refuse burner separations.....			61-84
Remodeling to comply in existing theatre.....			53-4
Exceptions.....			53-3
Repairs to comply in existing theatres.....			53-4
Exceptions.....			53-3
Rise of steps: 7½ in. max.....			64-31
Roof promenades prohibited for theatre patrons.....			53-53
Rooms converted for special uses.....			53-8
Rooms, public: Exit required other than entrance:—			
Provided: Room area is over 100 sq. ft....	53-45	53-92	53-93
Groups of rooms, area over 300 sq. ft....	53-45	53-92	53-93

**Scenery: Combustible prohibited, Type 1 Stage.....**

Moveable prohibited, Type 1 Stage.....	53-30
School, Class I prohibited.....	63-2

**Seats:—**

Alterations to comply in existing theatre.....	53-6
Arc of over 90° between aisles prohibited.....	53-128
Arms required for all fixed seats.....	53-130
Balcony:—	
Defined as over 10 rows.....	53-1
6 rows max. between front and transverse side.....	53-56
9 rows max. between transverse aisles.....	53-56
Transverse aisle required in rear.....	53-56
Bank of seats:—	
Defined as rows at different levels.....	53-1
15 banks max. on main floor without cross aisle.....	53-67
Unless: Each aisle has direct exit.....	53-67
Fixed seats are required.....	53-131
Except: In boxes, portable seats allowed:—	
1 for each 5 sq. ft. floor area.....	53-131
20 max. allowed.....	53-131
Prohibited on sloping floor.....	53-131
Group of seats defined: 2 or more.....	53-1
Level terraces on main floor.....	53-28
Except: Ramps to aisles permitted.....	53-28
Extra aisle, 2 ft. wide permitted.....	53-28
Main floor: 15 rows max. without cross aisle.....	53-67
Except: With direct exit for each aisle.....	53-67
Mezzanine defined as 10 rows or less.....	53-1

**Seats:—(Cont.)**

Number in rows and between aisles:—

Balcony:—

6 rows max. between front and transverse side.....	53-56
9 rows max. between transverse aisles.....	53-56
12 seats max., between aisles.....	53-128
6 seats max., aisle on 1 end only.....	53-128

Main floor:—

12 seats max., between aisles.....	53-128
Except: Add 1 seat for each 1 in. over 34 in. back to back.....	53-128
Except: If 42 in. back to back:—	
1. 48 seats max. between aisles, or.....	53-128
2. 80 ft. max. length of row.....	53-128
3. 10 seats max., aisle at one end only.....	53-128

Portable allowed in boxes, level floors only:—

1 for each 5 sq. ft. of floor area.....	53-131
20 max. number allowed.....	53-131

Row, defined: Adjoining seats side by side.....

40-1

Self-raising: Main floor:—

2 rows required opposite emergency exit door.....	53-132
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Spacing: 18 in. between rearmost point of back and foremost point of arm of seat in row behind.....

53-132

Spacing: Regular seats:—

34 in. back to back.....	53-129
16 in. min., back of seat to foremost point of arm of seat in row behind.....	53-129

Spacing: Self-raising seats:—

18 in. between rearmost point of back and foremost point of arm of seat in row behind.....	53-132
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Width: 90% of all seats:—

20 in. center to center of arms.....	53-130
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Width: 10% of all seats may be:—

19 in. center to center of arms.....	53-130
--------------------------------------	--------

Secondary entrance: Any other than principal.....

53-1

Signs, exit:—

Classes: Standard Directional.....	53-187
Standard Exit.....	53-187
Standard Fire Escape.....	53-187
Conform to Chapter 66, Signs.....	53-187

Illumination:—

5 ft. candles required.....	53-188
Continuous use during open time.....	53-188
Controlled separately.....	53-188
Wiring from emergency system.....	53-188

Standard Directional Signs required:—

1. Horizontal exit connections.....	53-193
Every change in direction.....	53-193
Except: In vomitories.....	53-193
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Except: In vomitories.....	53-194
3. Exit courts.....	53-195

Standard Exit Signs required:—

1. At public exit doorways.....	53-189
Visible through unobstructed doorways.....	53-189
Groups of doors over 10 in. between jambs.....	53-189
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3. At exit courts.....	53-191

Standard Fire Escape Signs required:—

1. At every door to fire escape.....	53-192
Except: Emergency stair fire escape.....	53-192

Spiral stairs from gridiron.....

53-98

Stadium type auditorium:—

Longitudinal aisle leads to transverse aisle.....	53-50
---	-------

Rearmost transverse aisle:—

Shall have inside normal exit doorway, or vomitory leading to such doorway for each side of auditorium.....	53-60
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Stadium type auditorium:—(Cont.)			
Rearmost transverse aisle:—(Cont.)			
Such doorway: 20 in. per 100 . . . . .			53-60
4 ft. min. width . . . . .			53-60
Transverse aisle: Both normal and emergency exit . . . . .	53-57		53-67
Stage Block:—			
Alterations to comply in existing theatres . . . . .			53-5
Basement: Finish and fixtures to be non-combustible . . . . .			53-24
Depth, Type 1: 3 ft. max. . . . .			53-30
9 ft. max., 180 sq. ft. extra area . . . . .			53-30
Doors:—			
Inner vestibule door: Non-combustible . . . . .			53-23
Outside exit doors: 2 required from opposite sides of stage . . . . .			53-95
Outside stage block door to be vestibuled . . . . .			53-23
Projection block in stage block . . . . .			53-23
Property room in stage block . . . . .			53-23
Storage room in stage block . . . . .			53-23
Handrail may be wood . . . . .			53-24
Highest point in Type 1 Stage:—			
4 ft. max., above proscenium opening . . . . .			53-30
35 ft. max., above stage floor . . . . .			53-30
Parapet wall required . . . . .			53-15
Remodeling to comply, existing theatres . . . . .			53-5
Separations: Type 1 Stage, 3 hr. const. . . . .			53-15
Type 2 Stage, 4 hr. const. . . . .			53-15
Except: In multiple occupancies . . . . .			53-15
Parapet wall required . . . . .			53-15
Sprinklers required, Type 2 Stage . . . . .			53-174
Except: Prohibited beneath stage vent . . . . .			53-174
Trap doors may be 2½ in. solid wood . . . . .			53-17
Trap space: Defined as space under floor . . . . .			53-1
Location limits . . . . .			53-32
60 min. door required . . . . .			53-23
Width, Type 1 Stage:—			
Equal to width of proscenium opening . . . . .			53-30
Windows not permitted, Type 2 Stage . . . . .			53-115
Workshop:—			
Finish and fixtures, non-combustible . . . . .			53-24
Shop operated for stage purposes . . . . .			53-1
2 hr. separations required . . . . .			53-19
Stage, general:—			
Defined . . . . .			40-1
Property room . . . . .	53-19	53-1	53-174
Storage room . . . . .	53-19	53-1	53-174
Workshop . . . . .	53-1	53-19	53-174
Stage, Type 1:—			
Depth, max. 3 ft. . . . .			53-30
Depth, max. 9 ft.; 180 sq. ft. extra . . . . .			53-30
Floors, wood finish allowed . . . . .			53-16
Footlights prohibited . . . . .			53-30
Highest point: 4 ft. above proscenium opening . . . . .			53-30
35 ft. max. above stage floor . . . . .			53-30
Proscenium fire curtain not required . . . . .	53-133		53-30
Scenery, Combustible: Prohibited . . . . .			53-30
Moveable, prohibited . . . . .			53-30
Size limited . . . . .			53-29
Stage vent required . . . . .	53-30		53-118
Trap doors prohibited . . . . .			53-30
Used for sound projection only . . . . .			53-30
Ventilation, mechanical, not required . . . . .			53-117
Vent required (see Stage vents) . . . . .			53-118
Width, max.: Clear width of proscenium opening . . . . .			53-30
Windows not required (See also Stage Block) . . . . .			53-115
Stage, Type 2:—			
Basement to be sprinklered . . . . .			53-174
Capacity factor is 6 . . . . .	62-2		62-3

Stage, Type 2:—( <i>Cont.</i> )		
Combustible scenery permitted. . . . .		53-31
Elevators: Orchestra, stage, special. . . . .		79-119
Fire curtain required. . . . .		53-31
Floors, wood finish permitted. . . . .		53-16
Movable scenery permitted. . . . .		53-31
Proscenium fire curtain required. . . . .	53-31	53-135
Proscenium opening sprinklers. . . . .		53-174
Rooms to be sprinklered. . . . .		53-174
Sprinklers required. . . . .		53-174
Except: Under stage vent. . . . .		53-174
Standpipes required. . . . .		53-175
Switchboard pocket, proscenium wall. . . . .		53-31
Trap doors permitted. . . . .		53-31
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# INDEX SUMMARY

## CHAPTER 54

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## CHAPTER 55

### PUBLIC ASSEMBLY UNIT

#### Includes:—

Aquariums	Convention Halls	Lunch Rooms
Armories	Council Chambers	Museums
Art Galleries	Court Rooms	Music Halls
Athletic Clubs	Dance Halls	Natatoriums
Athletic Rooms	Dining Rooms	Passenger Stations
Auditoriums	Eating Places	Planetariums
Banquet Rooms	Exhibitions	Pool Rooms
Bath Houses	Expositions	Reading Rooms
Billiard Rooms	Field Houses	Restaurants
Board of Trade	Funeral Homes	Riding Academies
Bowling Alleys	Galleries	Rinks
Broadcasting Studios	Game Room	Roof Gardens
Cabarets	Grills	Smoking Rooms
Cafes	Gymnasiums	Taverns
Cafeterias	Lecture Rooms	Trading Rooms
Circuses	Legislative Halls	
Community Houses	Libraries	
Concert Halls	Lodges	

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##### Balconies:—

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Capacity factor 25, including alleys and pits.....	62-3
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**Basements and floor over: 3 hr. construction:—**

1. In assembly halls not over 1 story.....	55-12
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Capacity: 11 to 100, meet school requirements.....	55-11
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**Except in:—**

1. Church
2. Institutional building

## Construction:—(Cont.)

Capacity: 11 to 100, meet school requirements:—(Cont.)

Except in:—(Cont.)

3. Open air assembly unit

4. School

5. Theatre

which shall conform to occupancy types..... 55-11

Fireproof construction required:—

1. Over 4 stories high, or..... 55-7

2. Over 50 ft. high, or..... 55-7

3. Over 1,800 capacity..... 55-7

Except, omit fireproofing roof steel when:—

1. Roof steel is 20 ft. up, and there is..... 55-7

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Semi-Fireproof Construction required:—

1. Over 2 stories high, and..... 55-8

2. Not over 50 ft. high, or..... 55-8

3. 801 to 1,800 capacity..... 55-8

Heavy Timber or Ordinary Construction required:—

1. Not over 2 stories high..... 55-9

2. Not over 800 capacity..... 55-9

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10 persons or less..... 55-10

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Separations:—

Annexes: 1 story and basement: 3 hr. const..... 55-13 61-51

Assembly halls:—

Ordinary constructed buildings:—

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2 hr. const. from other occupancies..... 63-6

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Emergency, includes doors, horizontal and vertical exits..... 55-30

Exits: Defined generally:—(Cont.)

Employees:—

Includes doors, horizontal and vertical exits. . . . . 55-31

Includes public exits. . . . . 55-31

Horizontal, defined. . . . . 55-41

Normal: Includes doors, horizontal and vertical exits. . . . . 55-29

Does not include emergency exits. . . . . 55-29

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Exits, horizontal:—

Emergency:—

Aisles, transverse: Count as normal and emergency exits in:—

Balconies, and. . . . . 55-64

Rear of stadium type auditoriums. . . . . 55-64

Width: Coincidental, not cumulative. . . . . 55-64

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Corridors, not serving as ingress. . . . . 55-61

Doors, not serving as ingress. . . . . 55-61

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Lobby, not serving as ingress. . . . . 55-61

Outside, non-combustible platform (no ingress). . . . . 55-61

Passages, not serving as ingress. . . . . 55-61

Distance from stage or platform:—

Max. ½ distance between 1st and last rows of seats. . . . . 55-60

Doors:—

Conform to wall construction. . . . . 55-77

Hardware, locks, panic bars. . . . . 55-79

May project into 7 ft. clear passage, swing 180°. . . . . 55-45

Open in direction of travel. . . . . 55-63 55-45

Open out. . . . . 55-63 55-45

Outside exit:—

1 at least required leading to alley or street, or 10 ft. space leading to alley or street. . . . . 55-71

If 1 only: Location other side from entrance. . . . . 55-72

If 2: Perimeter separation, 20% of perimeter. . . . . 55-72

If over 2:9 Perimeter separation, 15% of perimeter. . . . . 55-72

Level landing, 4 ft. from ramp to 1 ft. outside jambs. . . . . 55-73

May be wood. . . . . 55-78

Shall not encroach on streets, etc. . . . . 55-78

Width: 3 ft. min. . . . . 55-35

9 in. per 100 persons on 1st floor. . . . . 55-55

11 in. per 100 persons, other levels. . . . . 55-55

Hardware, locks, panic bars, etc. . . . . 55-79

Landing, level: 4 ft. from slope to 1 ft. outside jambs. . . . . 55-73

Level landing: 4 ft. from slope to 1 ft. outside jambs. . . . . 55-73

Locks: To open easy from inside, no key. . . . . 55-79

Open space width not less than exit width. . . . . 55-72

Ramps to conform same as Normal exits. . . . . 55-62

Required: Every room or level over 250 capacity. . . . . 55-54

Stage, distance from: ½ distance, 1st to last seat. . . . . 55-60

Steps, same as in Normal Horizontal Exits. . . . . 55-62

Through public rooms, without return. . . . . 55-27

Width:—

9 in. per 100 capacity on 1st floor. . . . . 55-55

11 in. per 100 capacity on other floors. . . . . 55-55

Corridors, min. 4 ft. . . . . 55-35

Cumulative increase to outer exit

Greatest floor capacity, plus assembly rooms. . . . . 55-55

Doors, min. 3 ft. . . . . 55-35

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No limit: Steps or risers. . . . . 55-42

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Assembly rooms: Special requirements:—

See Assembly rooms, exits, above

Based on capacity. . . . . 55-4 62-2 62-3

## Exits, horizontal:—(Cont.)

## Normal:—(Cont.)

Defined as aisles, corridors, doors, foyer, lobby, passages, etc. . . . . 55-41

## Doors:—

Locks on outside exits to open from inside without key. . . . . 55-79

May project into 7 ft. passage. . . . . 55-45

May swing 180°. . . . . 55-45

Number: see Doors, outside exit

Open in direction of travel. . . . . 55-45

Open outwards. . . . . 55-45

## Outside exit:—

Must lead to alley, or street, or 10 ft. open space leading to alley or street. . . . . 55-53

## Number required:—

2 required: 800 or less capacity. . . . . 55-53

3 required: 801 to 2,000 capacity. . . . . 55-53

4 required: 2,001 to 5,000 capacity. . . . . 55-53

Over 5,000, Add 1 for each 2,000 or fraction. . . . . 55-53

Shall not encroach on alley, etc. . . . . 55-77

Shall not project into passage less than 7 ft. in clear. . . . . 55-45

Width: 3 ft. min. . . . . 55-35

Lead to inside exit door at each end, or. . . . . 55-44

Lead to outside exit door. . . . . 55-44

Lead to transverse aisle at front near stage, in case of longitudinal aisle. . . . . 55-44

Locks, outside exit doors, open without key on inside. . . . . 55-79

Number, see Doors, Outside Exit

Ramps, in aisles, slope, max., 1 in 5. . . . . 55-43

Ramps, elsewhere, max. slope 1 in 6. . . . . 55-43

Steps: If any, at least 3 required, except in aisles. . . . . 55-51

Cut, max. 10 in. . . . . 55-50

Extend full width of aisle, passage, etc. . . . . 55-42

Rise, max. 7½ in. . . . . 55-50

Separation, full exit width from door, etc. . . . . 55-42

Through public rooms without return. . . . . 55-27

Exceptions: Boxes under 20 seats. . . . . 55-27

Rooms under 1,000 sq. ft. . . . . 55-27

Width: 18 in. per 100 on 1st floor. . . . . 55-34

22 in. per 100, other levels. . . . . 55-34

Corridors and passages, 4 ft. min. . . . . 55-35

Except: Balconies 250 capacity 3 ft. min. . . . . 55-35

Cumulative increase to exit. . . . . 55-34

Doors: 3 ft. min. . . . . 55-35

Figured on greatest floor capacity, plus assembly rooms. . . . . 55-34

## Exits, Stairs:—

Handrails. . . . . 64-34

Inclosure required, except 1st story. . . . . 64-28

Sharp interior wall angles eliminated. . . . . 64-39

See Exits, Emergency, vertical and Emergency, horizontal

Winders, 9 in. wide, 1 ft. out. . . . . 64-36

## Exits, Vertical:—

## Emergency:—

Assembly rooms: See Assembly rooms

## Balcony:—

See Assembly room exits

Distance between 2 most remote exits. . . . . 55-68

Not over 70% of width on 1 side of room. . . . . 55-68

Required emergency when over 250 capacity. . . . . 55-54

Width, over 250 capacity: 4 ft. min. . . . . 55-35

Width, 250 capacity or less: 3 ft. min. . . . . 55-35

Capacity factors: General. . . . . 62-2 62-3

Capacity: Greatest floor capacity plus assembly rooms. . . . . 55-55

Continuous to main exit level. . . . . 55-67

Cumulative increase toward outside door. . . . . 55-55

Cut: 10 in. min. . . . . 55-69 64-31

Defined as ramps and stairs. . . . . 55-55 55-65

Direction: To lead out, flight nearest main exit level. . . . . 55-68

## Exits, Vertical:—(Cont.)

## Emergency:—(Cont.)

Flights, height of: 11 ft. 6 in. max. . . . .	55-70
Greatest floor capacity, plus assembly rooms. . . . .	55-55
Gymnasiums: Same as Assembly Rooms. . . . .	55-57
See Assembly Rooms, Exits	
Lead to horizontal emergency exit, main exit level. . . . .	55-68
Lead outward, flight nearest main exit level. . . . .	55-68
Line of travel: 100 ft. max., seat to emergency door. . . . .	55-60
May be ramps or stairs not used for ingress. . . . .	55-65
Must be continuous to main exit level. . . . .	55-67
Number: Sufficient for incoming needs. . . . .	55-68
See Assembly rooms, exits	
Ramp, same as stairs. . . . .	55-65 64-53
Required: Every level over 250 capacity. . . . .	55-54
Every room over 250 capacity. . . . .	55-54
Every story above or below main exit level. . . . .	55-66
Rise: 7½ in. max. . . . .	55-69 64-31
Risers, if any, at least 3 required, except in aisles. . . . .	55-70
Steps, if any, at least 3 required, except in aisles. . . . .	55-70
Width:—	
9 in. per 100 on 1st floor. . . . .	55-55
11 in. per 100 on other levels than 1st floor. . . . .	55-55
Cumulative increase toward exits:—	
Greatest floor capacities, plus all assembly rooms. . . . .	55-55
4 ft. min. . . . .	55-56 55-35
3 ft. min., doors to vertical exits. . . . .	55-35
Employees Emergency:—	
Basement used by employees:—	
Exit 3 ft. min. . . . .	55-75 53-97 53-103
Panic bars, etc. not required. . . . .	55-79
Spiral or winding. . . . .	55-75 53-98 53-104
Stage, Type II, same exits as theatres. . . . .	55-75 53-98
Employees Normal:—	
1 vertical (or 1 horizontal) required. . . . .	55-74
Construction, same as for stairs generally. . . . .	55-74
Panic bars not required. . . . .	55-79
100 ft. max. distance to any point in floor. . . . .	55-74
Width, 3 ft. min. . . . .	55-74
Normal:—	
Assembly rooms, special requirements	
See Assembly Rooms, Exits	
Balcony:—	
See Assembly Rooms, Exits	
Distance between 2 most remote vertical exits. . . . .	55-49
Not more than 70% of width on 1 side of room. . . . .	55-49
Width, over 250 capacity, 4 ft. min. . . . .	55-35
Width, 250 or less capacity, 3 ft. min. . . . .	55-35
Capacity factors, general. . . . .	62-2 62-3
Cumulative increase toward outside door:—	
Greatest capacity floor plus all assembly rooms. . . . .	55-34
Cut, 10 in. min. . . . .	55-50
Defined as stairs, ramps, and vomitories. . . . .	55-46
Direction, to lead out, lowest flight near main floor. . . . .	55-49
Flights, height of: 11 ft. 6 in. max. . . . .	55-51
Gymnasiums, same as assembly hall exits. . . . .	55-36 to 55-39
See Assembly Rooms, Exits	
Handrails, see Handrails	
Lead to horizontal exit, main exit level. . . . .	55-49
Lead outward, flight nearest main floor. . . . .	55-49
Number, 2 required from any public space. . . . .	55-47
Ramp must meet applicable stair codes. . . . .	55-46
Slope, aisles, max. 1 in 5. . . . .	55-43
Slope, others, max. 1 in 6. . . . .	55-43
Rise, 7½ in. max. . . . .	55-50
Risers, at least 3 required, if any, except in aisles. . . . .	55-51

**Exits, Vertical:—(Cont.)****Normal:—(Cont.)**

Rooms with seating, same as Assembly Rooms . . . . .	55-36
Steps: Extend full width of aisle, passage, etc. . . . .	55-42
If any, 3 are required, except in aisles . . . . .	55-51
4 ft. landing separation from vomitory ramp . . . . .	55-52
Stairs, non-required, same as stairs generally . . . . .	55-33
Start at highest level requiring exits . . . . .	55-48
Vomitories:—	
Counts as vertical exit with ramp or stair . . . . .	55-46
Meet stair codes . . . . .	55-47 64-9
Steps: If any, 3 required . . . . .	55-52
4 ft. landing from vomitory ramp . . . . .	55-52
Width:—	
18 in. per 100 on 1st floor . . . . .	55-34
22 in. per 100 on other levels . . . . .	55-34
Cumulative increase toward exits:—	
Greatest floor capacity plus all assembly rooms . . . . .	55-34
3 ft. min.: Balconies 250 or less capacity . . . . .	55-35
3 ft. min.: Doors to vertical exits . . . . .	55-35
4 ft. min.: General: Corridors, ramps, stairs . . . . .	55-35

**Fire Curtain:—**

Draw curtain permitted, no combustible scenery . . . . .	55-86
With combustible scenery, same as theatres . . . . .	55-86 53-135 to 53-160

**Fireproofing Omitted:—**

Annexes, 1 story, or 1 story and basement if:—	
1. Capacity is 1,500 or less . . . . .	61-51
2. Structural roof members are 20 ft. up . . . . .	61-51
3. 3 hr. separation, 60 min. door . . . . .	61-51
4. Used for gym, assembly, or natatorium . . . . .	55-13 61-51
5. Wood roof sheathing, 2 $\frac{3}{8}$ in. min. thickness . . . . .	61-51
Fireproof construction: Structural roof members 20 ft. up . . . . .	55-7

**Fire Protection:—**

General . . . . .	55-90
Sprinklers . . . . .	55-91
Standpipes . . . . .	55-92

**Fire separations, see Multiple Occupancy****Floor levels, fireproof construction:—**

Assembly room: No limit above grade . . . . .	55-16
Max. 14 ft. below grade . . . . .	55-16
Gymnasium: No limit above grade . . . . .	55-16
Max. 14 ft. below grade . . . . .	55-16

**Floor levels, other than fireproof construction:—**

Assembly rooms: 15 ft. max. above grade . . . . .	55-17
7 ft. max., below grade . . . . .	55-17
Gymnasiums: 15 ft. max. above grade . . . . .	55-17
7 ft. max. below grade . . . . .	55-17

**Floor levels: Rinks:—**

Over 25 capacity, max. 2 ft. over or under grade . . . . .	55-23
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**Frontage on open spaces, 10 ft. min.:—**

200 or less capacity, 1 street . . . . .	55-5
201 to 800 capacity, 1 street and 1 open space . . . . .	55-5
Over 800 capacity, 1 street and 2 open spaces . . . . .	55-5
Fireproof passage counts as open space . . . . .	55-5 64-15

**Game rooms . . . . .**

55-3 55-18

**Garage:—**

4 hr. separation required . . . . .	63-3f 63-3j
Prohibited in non-fireproof building . . . . .	63-2
See Multiple Occupancy	

**Gas, 10 lb. in container, max. allowed . . . . .**

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**Gymnasiums:—****Same as Assembly Rooms, except:—****Balconies:—**

Prohibited over 50 capacity except in fireproof and semi-fireproof construction . . . . .	55-18
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Capacity factor is 10 . . . . .	62-3
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<b>Halls, capacity factor 6.</b>	62-3
Handrails:—	
1 required on stairs 3 ft. 6 in. or less.	64-34
2 required on stairs 3 ft. 6 in. to 7 ft. 0 in.	64-34
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- Width, 18 in. per 100 persons..... 57-39
- Width, 2 ft. 6 in. min..... 57-39

##### Balconies for spectators:—

- Exits permitted to more than 1 story..... 57-19
- Permitted only in Fireproof and Semi-fireproof construction..... 57-19
- Prohibited in Heavy Timber construction..... 57-19
- Prohibited in Ordinary construction..... 57-19

##### Capacity limits:—

- Semi-fireproof construction, max. 1,500 persons..... 57-18
- Heavy Timber construction, max. 600 persons..... 57-18
- Ordinary construction, max. 600 persons..... 57-18
- Exception: Annexes may have max. of 1,500 persons..... 57-18

Combustible scenery used, see Stage, Type II

##### Corridors from assembly rooms:—

- Over 800 capacity, 27 in. per 100 persons..... 57-38
- Increase 10% for each 5 ft. over 20 ft. above grade..... 57-38
- Width, 6 ft. min..... 57-32

Defined, room over 1,500 sq. ft., used for assembly..... 57-7

##### Doors from assembly rooms:—

- 2 required, 300 or less capacity..... 57-37
- 3 required, over 300 capacity..... 57-37
- Open into alley, street, foyer, public passage, or into 10 ft. open space leading to street..... 57-37

##### Perimeter distance, center to center:—

- If 2 required, 40% of perimeter..... 57-37
- If 3 required, 2 others at least 15% of perimeter..... 57-37
- Width, 27 in. per 100 persons..... 57-38
- Increase 10% for each 5 ft. over 20 ft. above grade..... 57-38
- 2 ft. 8 in. min..... 57-32

##### Floor levels:—

##### Fireproof construction:—

- Unlimited above grade..... 55-17
- 6 ft. max. below grade..... 57-17

##### Non-fireproof construction:—

- 10 ft. max. above grade..... 57-18
- 6 ft. max. below grade..... 57-18

Illumination: Exit: see Lighting, Exit, General Index

    General: 2 ft. candles, plane 30 in. up..... 57-80

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Scenery, combustible: See Stage, Type II

## Assembly Rooms:—(Cont.)

## Seats:—

14 in. row between aisles . . . . .	57-39
7 in. row between aisle and wall . . . . .	57-39
34 in. back to back, seats with back . . . . .	57-40
26 in. back to back, no backs . . . . .	57-40
Rise: Bank to bank, 21 in. max. . . . .	57-41
Width with arms, 20 in., except Teaching Amphitheatre . . . . .	57-68
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## Stairs from assembly room:—

Over 800 capacity, 22½ in. per 100 . . . . .	57-38
Increase 10% for each 5 ft. above 20 ft. over grade . . . . .	57-38
Width, min. 3 ft. 8 in. . . . .	57-32
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## Balconies, Spectators:—

Exits permitted to more than 1 story . . . . .	57-19
Permitted in Fireproof construction . . . . .	57-19
Permitted in Semi-fireproof construction . . . . .	57-19
Prohibited in Heavy Timber construction . . . . .	57-19
Prohibited in Ordinary construction . . . . .	57-19
Same Aisle, Seat, and Exit requirements as Assembly Rooms	

## Basement:—

Class, study and instruction rooms prohibited . . . . .	57-23
Defined: Floor level over 2 ft. below grade, and ceiling 8 ft. or less above grade . . . . .	57-1

## Cafeterias:—

Excluded from school capacity computations . . . . .	57-5
Exits, over 800 sq. ft. area:—	
2 required . . . . .	57-58
Distance apart on perimeter, 40% c.-c. . . . .	57-37
Width: 27 in. per 100 persons . . . . .	57-58
Doors, 2 ft. 8 in. min. . . . .	57-32
Stairs, 3 ft. 8 in. min. . . . .	57-32
Lighting, 2 ft. candles on plane 30 in. up. . . . .	57-80
Mechanical ventilation, food heating rooms . . . . .	57-67
Skylights (if no windows) 10% of floor area, ½ to open . . . . .	57-67
Windows (if no skylights) 10% of floor area, ½ to open . . . . .	57-67

## Capacity:—

Assembly room: Total of main floor, stage, balconies . . . . .	57-7
Based on fixed seats plus factor computations . . . . .	57-5    62-2    62-3
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Corridors . . . . .	57-5
Fuel storage rooms . . . . .	57-5
Furnace rooms . . . . .	57-5
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Other rooms, seats provided elsewhere . . . . .	57-5
Rooms not entered by students . . . . .	57-5
Storage rooms . . . . .	57-5
Toilet rooms . . . . .	57-5
Factors . . . . .	62-3

## Ceiling Height:—

Assembly rooms: 12 ft. min. . . . .	57-16
Balconies: Need not exceed 8 ft., above or below . . . . .	57-16

# Ceiling Height:—(Cont.)

Cafeterias, no mechanical ventilation: 12 ft. min. . . . .	57-25
Cafeterias, with mechanical ventilation: 10 ft. 6 in. min. . . . .	57-25
Cafeterias, lunches from outside: No requirements. . . . .	57-25
Class rooms, area 200 sq. ft. or less: 10 ft. min. . . . .	57-23
Class rooms, over 200 sq. ft.: 12 ft. min. . . . .	57-23
Gymnasiums: 12 ft. min. . . . .	57-16
Measurement, floor line to lowest ceiling line . . . . .	57-22
Play rooms; 10 ft. min. . . . .	57-26
Projections permitted 12 in. below ceiling . . . . .	57-22
Recreation rooms: 10 ft. min. . . . .	57-26
Rooms serving food:—	
Lunches from outside, no requirements. . . . .	57-25
No mechanical ventilation: 12 ft. min. . . . .	57-25
With mechanical ventilation: 10 ft. 6 in. min. . . . .	57-25
Study rooms, 200 sq. ft. or less: 10 ft. min. . . . .	57-23
Study rooms, over 200 sq. ft.: 12 ft. min. . . . .	57-23
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High schools, Class I. . . . .	57-2
Colleges, Class II. . . . .	57-2
Commercial, Class II. . . . .	57-2
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Vocational, Class II. . . . .	57-2
Single dwelling, sitting less than 10. . . . .	57-4
Class Rooms:—	
Aisles:—	
1-18 in. aisle required along each wall. . . . .	57-44
Cross aisles: 30 in. min. width. . . . .	57-44
Intermediate aisles: 16 in. min. width. . . . .	57-44
Main aisle: 30 in. min. width. . . . .	57-44
Seats: 14 in row between aisles. . . . .	57-44
With arms: 20 in. wide. . . . .	57-68
No arms: 18 in. wide. . . . .	57-68
Teaching amphitheatre, excepted, which see. . . . .	57-68
Capacity factor 18. . . . .	62-3
Doors, outside exit:—	
8 ft. min. distance to lot line. . . . .	57-9
Increase 1 ft. for each story over 4, Class I school. . . . .	57-9
Increase ½ ft. for each story over 4, Class II school. . . . .	57-9
Exception: Facing alley, street, or public space over 10 ft. wide. . . . .	57-9
Doors required:—	
800 or less capacity:—	
1 leading direct to main corridor, or 1 leading direct to outer air. . . . .	57-43
Over 800 capacity:—	
2 leading direct to outer air or main corridor. . . . .	57-43
Exception: 1 may lead to other class room. . . . .	57-43
Width, min. 2 ft. 8 in. . . . .	57-32
Illumination, 5 ft. candles on plane 30 in. up. . . . .	57-80
Live load, 50 lb. per sq. ft. . . . .	70-1
Ventilation, choice of 1 of 2 ways:—	
1. Net opening area, 8% of floor area. . . . .	57-64
2. Mechanical ventilation. . . . .	57-64 65-2 81-7
Windows, required:—	
8 ft. min. distance to lot line. . . . .	57-9
Increase 1 ft. for each story over 4, Class I schools. . . . .	57-9
Increase ½ ft. for each story over 4, Class II schools. . . . .	57-9
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Closets, prohibited under stairs, non-fireproof buildings. . . . .	57-28
Colleges are Class II. . . . .	57-2
Combined Class I and Class II schools:—	
Must conform to Class I code. . . . .	57-3
Except: If separated by fire walls. . . . .	57-3
Shall be separated from each other. . . . .	57-30
Commercial schools are Class II. . . . .	57-2

## Commercial training rooms:—

## Partitions, rooms 250 sq. ft. or less:—

Glazed from 3 ft. up to 7 ft. 6 in. ....	57-24
--	-------

Height may be 7 ft. 6 in. ....	57-24
--------------------------------	-------

Ventilation, same as class rooms. ....	57-24
--	-------

## Construction:—

## Annexes, 1 story, or 1 story and basement:—

## Unprotected roof steel and columns, if:—

1. Used as assembly room, gymnasium, etc. ....	57-14	61-51
--	-------	-------

2. 1,500 capacity or less. ....	57-14	61-51
---------------------------------	-------	-------

3. Principal steel, 20 ft. up. ....	57-14	61-51
-------------------------------------	-------	-------

4. 2½ in. roof sheathing. ....	57-14	61-51
--------------------------------	-------	-------

5. 3 hr. separation, 60 min. doors. ....	57-14	61-51
--	-------	-------

Basements, floor above, 3 hr. construction. ....	57-13
--	-------

## Fireproof required:—

Over 4 stories high. ....	57-10
---------------------------	-------

Over 50 ft. from grade to 4th floor. ....	57-10
---	-------

## Except: Omit fireproofing:—

Roof members over 20 ft. above floor. ....	57-10
--	-------

1 hr. construction for roof slabs, etc. ....	57-10
--	-------

Certain annexes, see Construction, Annexes	
--	--

## Semi-fireproof construction required:—

1 story: Over 600 capacity. ....	57-11
----------------------------------	-------

4 stories or less, 50 ft. or less to 4th floor. ....	57-11
--	-------

Assembly room must be 1,500 or less capacity. ....	57-18
--	-------

Gymnasium must be 1,500 or less capacity. ....	57-18
--	-------

## Except:—

2 stories, 200 capacity or less, may be Ordinary construction. ....	57-12
---	-------

Floor over basement must be fireproof. ....	57-13
---	-------

## Ordinary construction required:—

1 story high: 600 or less capacity. ....	57-12
--	-------

2 stories or less: 200 or less capacity. ....	57-12
---	-------

Assembly room must be 600 or less. ....	57-18
---	-------

Gymnasium must be 600 or less. ....	57-18
-------------------------------------	-------

## Except:—

Floor above basement must be fireproof. ....	57-13
--	-------

Portable buildings, which see. ....	57-15
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## Portable Buildings:—

1 story only. ....	57-15
--------------------	-------

28 ft. by 35 ft. max. size. ....	57-15
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10 ft. away from any other building. ....	57-15
---	-------

2 years limit on use. ....	57-15
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2 exit doors, separated by small building width. ....	57-15
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Non-combustible roof covering. ....	57-15
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Used as school only. ....	57-15
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Cooling. ....	57-77
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Corridors: see Exit Corridors	
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## Crippled children:—

Elevators: Area: 4 sq. ft. per person. ....	57-55
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Empty in 20 min., over 2nd floor. ....	57-55
--	-------

Required: Floors over 2nd. ....	57-55
---------------------------------	-------

## Curtains:—

Draw: No combustible scenery. ....	57-70
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Fire: Combustible scenery. ....	57-70
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**Defined as place of instruction** . . . . .

40-18

Defined as single dwelling, sitting 10 or less. ....	57-4
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## Doors, revolving:—

Permitted, Class II schools, in addition. ....	57-54
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Prohibited in Class I schools. ....	57-54
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## Drinking fountains:—

1 for each 250 students. ....	57-76
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1 in each story. ....	57-76
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**Eating rooms: see Cafeterias**

Elementary schools are Class I. ....	57-2
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## Elevators: Crippled children's school:—

Area: 4 sq. ft. per person.....	57-55
Empty floors above 2nd in 20 min.....	57-55
Required to serve all floors over 2nd.....	57-55

## Exits, Cafeterias over 800 sq. ft. area:—

2 required.....	57-58
Distance separation of center lines:—	
40% of perimeter on perimeter.....	57-37 57-58
Doors swing in egress direction.....	64-17
Width, 27 in. per 100 capacity.....	57-58
Width, 3 ft. 8 in. for stairway, general.....	57-32
Width, 2 ft. 6 in. for basement stair.....	57-32

## Exit Corridors from Assembly Rooms:—

Width, when over 800 capacity:—	
27 in. per 100 persons.....	57-38
Increase 10% for each 5 ft. over 20 ft. above grade....	57-17 57-38
6 ft. min., unobstructed.....	57-32

## Exit Corridors, other than from Assembly Rooms:—

Defined as main and secondary.....	57-33
Door not permitted to obstruct main corridor.....	57-36
Door permitted, not obstructing main corridor when open.....	57-36
Doors permitted, shutting off independent sections.....	57-36
Lockers, doors open or closed: Must not obstruct.....	57-35
Main: Defined, connecting student rooms with exits.....	57-33
Terminates directly in stair access, or at right angle to stair access.....	57-34
Obstructions prohibited: Passages 7 ft. or less.....	64-23
Secondary, other than main corridor.....	57-33
Width: Based on capacity.....	57-5 57-31 62-2 62-3
18 in. per 100 persons.....	57-31
6 ft. min. unobstructed main corridor.....	57-32

## Exit Courts:—

Doors open easily from inside, no key.....	57-57
Height, 6 ft. 6 in. min.....	57-57
Lead directly to passage to main stair or corridor.....	57-57
Swing in direction of egress.....	64-18
Width, 3 ft. min.....	57-57

## Exit Doors from Assembly Rooms:—

Location, distance separation on perimeter:—	
If 2 required, 40% of perimeter.....	57-37
If 3 required, 1 distance 40% of perimeter.....	57-37
And other 2, at least 15% of perimeter.....	57-37
All measured on perimeter, c.-c.....	57-37
Number: 300 or less capacity, 2 required.....	57-37
Over 300 capacity, 3 required.....	57-37
Open into foyer, public passage, street, alley, or.....	57-37
Open into 10 ft. open space leading to street or alley.....	57-37
Swing in direction of egress.....	64-17
Width, when over 800 capacity	
27 in. per 100 persons.....	57-38
Increase 10% for each 5 ft. over 20 ft. above grade.....	57-38
2 ft. 8 in. min.....	57-32

See Exit Doors, Outside

## Exit Doors, other than from Assembly Rooms:—

Class rooms, 800 or less capacity:—	
1 required direct to main corridor.....	57-43
Or 1 direct to outer air.....	57-43
Class rooms, over 800 capacity:—	
2 direct to outer air or main corridor.....	57-43
Except: 1 may lead to other class room.....	57-43
Permitted to shut off sections each with own exits.....	57-36
Swing in direction of egress.....	64-17
Study rooms, same as class rooms.....	57-43
Toilet room doors, 20 ft. between "Male" and "Female".....	57-73
Width: Based on capacity.....	57-5 57-31 62-2 62-3
18 in. per 100 persons.....	57-31
2 ft. 8 in. min.....	57-32

Exit doors, Outside: Class I Schools:—	
2 required, leading direct to street.....	57-52
Or by 10 ft. alley or open space.....	57-52
Class room outside exit doors:—	
8 ft. min. distance to lot line.....	57-9
Increase 1 ft. for each story over 4.....	57-9
Exception: When facing street, alley, or public space over 10 ft. wide.....	57-9
Location: Direct from stair inclosure.....	57-53
Perimeter distance separation to be 30% of perimeter, on perimeter...	57-53
Revolving doors prohibited.....	57-54
Swing out.....	64-18
Width: Combined width, cumulative.....	57-31
2 ft. 8 in. min.....	57-32
18 in. per 100 capacity.....	57-31
Exit doors, Outside: Class II Schools:—	
2 required, leading direct to street.....	57-52
Or by 10 ft. alley or open space.....	57-52
Class room, outside exit doors:—	
4 ft. min. distance to lot line.....	57-9
Increase $\frac{1}{2}$ ft. for each story over 4.....	57-9
Exception: When facing street, alley, or public space over 10 ft. wide.....	57-9
Location, Perimeter distance separation:—	
30% of perimeter on perimeter.....	57-53
Revolving doors permitted if in addition to requirements.....	57-54
Swing in direction of egress.....	64-18
Width: Combined width due to greatest floor capacity, plus assembly halls.....	57-31
2 ft. 8 in. min.....	57-32
18 in. per 100 capacity.....	57-31
Exit doors: Portable Schools:—	
2 required: Separated by smallest building width.....	57-15
Width: 2 ft. 8 in. min.....	57-32
Exit ramps: Same as stairs.....	64-53
Exits, roof:—	
When roof is used for assembly uses.....	57-56
1 stair required.....	64-11
Exit signs: see Signs, exit: General Index	
Exit stairs from Assembly Room:—	
Width: When over 800 capacity:—	
22 $\frac{1}{2}$ in. per 100 persons.....	57-38
3 ft. 8 in. min.....	57-32
Increase 10% for each 5 ft. over 20 ft. above grade...	57-17
See Exit Stairs, General	
Exit Stairs: General:—	
See Exit Stairs from Assembly Rooms	
Basement stairs:—	
Cut, 9 in. min.....	57-49
Exit same as stairs.....	57-47
Lead direct to horizontal exit to outer air.....	57-49
Rise, 8 in. max.....	57-49
2 ft. 6 in. min. width.....	57-32
Cut, min. 10 in.....	64-31
Doors to inclosures: 45 min.....	64-28
Swing toward egress.....	64-17
Handrails:—	
1 required on stairs 3 ft. 6 in. or less.....	64-34
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End newel posts 5 ft., intermediate rails.....	64-34
End returned and joined to wall.....	64-34
Extend to front edge of third tread.....	64-34
Height, 2 ft. 6 in. to 3 ft. 0 in., front edge of tread.....	64-34
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Inclosure required, except in main story.....	64-28
Landings required at each story, Class I schools.....	57-48

**Exit Stairs: General:—(Cont.)**

Landing shall be as wide as stair. . . . .	64-32
Except 4 ft. intermediate, in straight stairs. . . . .	64-32
Location:—	
Class I school: Against exterior wall. . . . .	57-47
In any story above or below main exit level:—	
Dead end corridor: 60 ft. max. from door to stair. . . . .	57-47
All other cases: 90 ft. max. from door to stair. . . . .	57-47
Measured: Door center line to 1st riser. . . . .	57-47
Number, 2 min. required in all schools:—	
Having class rooms above or below main floor. . . . .	57-45
Outside exit door direct from stair. . . . .	57-47
Rise, $7\frac{1}{2}$ in. max. . . . .	64-31
Risers, if any, at least 3 required. . . . .	64-33 57-51
Roofs, at least 1 required. . . . .	64-11
Sharp internal wall angles eliminated. . . . .	64-39
Start at highest level. . . . .	57-46
Steps, if any: At least 3 required. . . . .	57-51 64-33
Teaching amphitheatre:—	
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Width:—	
Based on capacity. . . . .	57-5 57-31 62-2 62-3
15 in. per 100 persons. . . . .	57-31
3 ft. 8 in. min. . . . .	57-32
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Red light at teacher's desk: School for deaf. . . . .	57-78
Required, all schools. . . . .	57-78
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Fire alarm systems. . . . .	57-78
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Fire separations: see Multiple Occupancy	
Floor Levels: Assembly rooms or gymnasiums:—	
Fireproof construction:—	
Unlimited above grade. . . . .	57-17
6 ft. max. below grade. . . . .	57-17
Non-fireproof construction:—	
10 ft. max. above grade. . . . .	57-18
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Frontage on open spaces:—	
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<b>Gymnasiums:—</b>	
Capacity factor is 5 for assembly space. . . . .	62-3
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Other requirements: Same as for Assembly Rooms	

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Heating plant separation: 2 hr. construction required. . . . .	61-84
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High schools are Class I. . . . .	57-2

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Illumination, on plane 30 in. above floor:—	
Assembly rooms: 2 ft. candles. . . . .	57-80
Cafeterias: 2 ft. candles. . . . .	57-80
Class rooms: 5 ft. candles. . . . .	57-80

## Illumination, on plane 30 in. above floor:—(Cont.)

Food serving rooms: 2 ft. candles.....	57-80
Laboratories: 5 ft. candles.....	57-80
Libraries: 5 ft. candles.....	57-80
Locker rooms: 1 ft. candles.....	57-80
Lunch rooms: 2 ft. candles.....	57-80
Manual training rooms: 5 ft. candles.....	57-80
Offices: 5 ft. candles.....	57-80
Play rooms: 3 ft. candles.....	57-80
Recreation areas: 1 ft. candles.....	57-80
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Student rooms: not for study: 2 ft. candles.....	57-80
Study halls: 5 ft. candles.....	57-80
Toilet rooms: 1 ft. candles.....	57-80

## Illumination on plane of work:—

Art rooms, 8 ft. candles.....	57-80
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## Instruction room, same as Class Room

## Lecture room: Capacity factor:—

1,500 sq. ft. or less, factor 10.....	62-3
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## Lighting, exit: see Lighting, Exit: General Index

## Lighting, general, see Illumination

## Live Loads:—

Assembly rooms with fixed seats: 75 lbs. per sq. ft.....	70-1
Assembly rooms, no fixed seats: 100 lb. per sq. ft.....	70-1
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Corridors: 100 lb. per sq. ft.....	70-1
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## Lunch rooms: see Cafeterias

## Motion picture booths: see Projection booths

## Multiple Occupancy:—

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With Class I school, prohibited.....	63-2
Wiring, independent for each use.....	63-5

## Partitions, office type 7 ft. 6 in. high:—

Glazed from 3 ft. up to full height.....	57-24
Inclosure area not over 250 sq. ft.....	57-24
Ventilation equal to class room requirements.....	57-24

Plan approval required by Fire Prevention Department.....	12-24
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Playroom: Used only for play or recreation.....	57-1
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## See Construction: Portable buildings

## See Exit doors: Portable schools

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INDEX SUMMARY  
CHAPTER 58  
OTHER BUILDINGS AND STRUCTURES



# INDEX SUMMARY

## CHAPTER 58

### OTHER BUILDINGS AND STRUCTURES

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Billboards	Police Stations
Carbarns	Prisons
Exposed Metal Structures	Railroad Structures (special)
Fences	Sheds
Hangars	Signboards
Ice Houses	Stables
Illuminated Signs	Tanks
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## Frontage consents

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- Non-Fuel-Fired. . . . . 58-49

- Defined as burners of garbage, rubbish, etc. . . . . 58-47

## Fuel-Fired:—

## Construction:—

## Burning 250 lb. of refuse per hour:—

- 8 in. com. brick, plus 4½ in. fire brick. . . . . 58-56  
 Or ¾ in. steel casing, 4 in. com. brick, plus 4½ in. fire brick. . . . . 58-56

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**Non-Fuel Fired:—****Chimneys:—**

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**Prisons, etc.:—****Includes:—**

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Jails	Prisons
Reformatories	
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## Multiple Occupancy: Fire station: 2 hr. separation required.....

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## Sleeping rooms: Prohibited below 1st floor.....

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ELEVATORS, DUMBWAITERS  
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# INDEX SUMMARY

## CHAPTER 79

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CHAPTER 82

PLUMBING



# INDEX SUMMARY

## CHAPTER 82

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		Members supporting walls.....	3 hour
Members supporting only one floor or roof...	3 hour	Except exterior columns.....	3 hour
Except: Columns and Joists		Members supporting only one floor or roof....	2 hour
Lintels and Spandrels:—		Except: Columns and Joists	
Fireproof as above may carry wall facing, 4½ in., on bare angles at not more than 3 ft. centers for height of spandrel beam		Lintels and Spandrels:—	
Lintels, Loose		Same as in F.P. Const.	
Need not be fireproofed:—		Lintels, Loose	
Openings not more than 3½ ft.		Same as in F.P. Const.	
Tie beams in elevator shafts need not be fire- proofed		Tie beams Same as in F.P. Const.	
Elevator sheave beams need not be fireproofed		Elevator sheave beams Same as F.P. Const.	
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FIREPROOF CONSTRUCTION (Cont.)		SEMI-FIREPROOF CONSTRUCTION (Cont.)	
<b>GROUND AND FURRING</b> Sec. 67-19		<b>GROUND AND FURRING</b> Sec. 67-36	
Grounds and furring, Wood:— Shall project not more than 3 in. Fire stops 1½" wood every 6 ft. each way All other grounds and furring to be incombustible		Grounds and Furring; Wood:— Same as in F.P. Const.	
<b>PARTITIONS</b> Sec. 67-18		<b>PARTITIONS</b> Sec. 67-35	
Incombustible:— Except in Business Units where subdividing partitions may be wood, or wood and glass, when they are included in areas of 600 sq. ft. or less already enclosed in incombustible partitions. Sec. 61-67 61-68 Studs, used only as door bucks Sec. 67-5		Same as in F.P. Const.  Studs used only as door bucks. . . . . 67-22	
<b>COMBUSTIBLE MATERIALS</b> Sec. 67-20		<b>COMBUSTIBLE MATERIALS</b> Sec. 67-37	
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<b>STRUCTURAL FRAME</b> Sec. 67-39 67-40		<b>STRUCTURAL FRAME</b> Sec. 67-50	
Exterior Walls:— Metal framing Reinforced concrete framing Or any combination		Exterior Walls:— Same as in Heavy Timber Const.	
Other Structural Members:— Metal Reinforced concrete Masonry Timber Or any combination		Other Structural Members:— Same as in Heavy Timber Const. except that no fireproofing is required, unless specified under general occupancy sections, and there is no limitation on the size of wood members, except as determined by strength.	
Columns, Exterior. . . . .	4 hour	Columns, Exterior; No requirements	
Columns, Interior. . . . .	2 hour	Columns, Interior; No requirements	
Columns, Timber, Min. dimension 9½ in.		Columns, Timber; No requirements	
Members Supporting Walls. . . . .	3 hour	Members Supporting Walls	
Except columns		Multiple Dwellings. . . . .	48-32 48-35
Timber, not supporting roof:—		Timber:—	
Beams } Min. dimension 5½ in.		Beams } No size limitations for either	
Girders } Min. area 52 sq. in.		Girders } floor or roof	
Trusses }		Trusses } Strength requirements only	
Timber, supporting roof only:—			
Beams }			
Girders } Min. dimension 3½ in.			
Trusses }			
Interior Members. . . . .	2 hour	Interior Members	
Beams: Other than timber. . . . .	2 hour	Beams }	
Girders: Other than timber. . . . .	2 hour	Girders } Strength requirements only	
Trusses: Other than timber. . . . .	2 hour	Trusses }	
Fireproofing not required:—		Fireproofing not required:—	
1. Where clear height above floor is 20 ft. or more		Except:—	
2. Lintels, loose, supporting 1 story only		Multiple dwellings. . . . .	48-32 48-35
3. Metal connections for timber members		Lintels: Wood permitted behind arches only	

HEAVY TIMBER CONSTRUCTION (Cont.)	ORDINARY CONSTRUCTION (Cont.)
<p><b>FLOOR CONSTRUCTION</b> Sec. 67-41</p> <p>Floor Members:—            Except flooring, are included under structural frame            Flooring, min. 3½ in., fastened together            May be 2 layers, lower one 2½ in.            Ceiling, direct against underside of floor, max. air space ½ in.</p>	<p><b>FLOOR CONSTRUCTION</b> Sec. 67-51 67-52</p> <p>Floor Members:—            Wood            Trussed steel joists            Flooring, no restrictions</p> <p>Ceilings, Basement            Metal lath and plaster required in buildings over 2 stories            See Occupancy Chapters 47 to 58</p>
<p><b>ROOF CONSTRUCTION</b> Sec. 67-42</p> <p>Roof Members            Except sheathing, are included under structural frame            Sheathing, min. 2⅝ in., not sprinklered            Sheathing, min. 1⅝ in., sprinklered</p>	<p><b>ROOF CONSTRUCTION</b> Sec. 67-51 67-52</p> <p>Roof Members            Wood            Trussed steel joists            Sheathing, no restrictions</p>
<p><b>EXTERIOR INCLOSING WALLS</b> Sec. 67-43 to 67-45</p> <p>Walls, Same as in F.P. Const.</p> <p>Bay Windows and Similar Projections:—            Same as in F.P. Const.</p> <p>Cornices:—            Same as in F.P. Const.</p>	<p><b>EXTERIOR INCLOSING WALLS</b> Sec. 67-54 to 67-56</p> <p>Walls, ..... Const. 3 foot            Masonry            Reinforced concrete            Bay Windows and Similar Projections:—            Same as in F.P. Const.</p> <p>Cornices:—            Projecting over street or alley, shall be completely incombustible</p>
<p><b>GROUND AND FURRING</b> 67-47</p> <p>Same as in F.P. Const.</p>	<p><b>GROUND AND FURRING</b></p> <p>No restrictions</p>
<p><b>PARTITIONS</b> Sec. 67-46</p> <p>Incombustible:—            Except in Business Units where subdividing partitions may be wood, or wood and glass, when they are included in areas of 400 sq. ft. or less already inclosed in incombustible partitions.            Sec. 61-69</p>	<p><b>PARTITIONS</b> Sec. 67-57</p> <p>Wood Stud Permitted:—            Lathed with:—            Wood            Metal lath            Gypsum            Fiber            Lath, metal; and ⅝ in. plaster            Lath, all other; and ¾ in. plaster            Except, wood stud bearing partitions may be used only in single dwellings</p>
<p><b>COMBUSTIBLE MATERIALS</b> Sec. 67-48</p> <p>May be Used:—            Same as in F.P. Const            Except:—            Sleepers, Wood, prohibited            Combustible lath, prohibited            Wood stud partitions, prohibited</p>	<p><b>COMBUSTIBLE MATERIALS</b></p> <p>May be Used:—            Except: Wood stud bearing partitions may be used only in single dwellings 67-51            Except: As specified in partitions above.</p>

WOOD CONSTRUCTION	
Outside Fire Limits:—	
Business Units.....	{Sec. 62-7 Sec. 50-10
Multiple Dwellings.....	48-38
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Inside Fire Limits:—	
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## FIRE PROTECTIVE COVERING OF METAL MEMBERS

1 Hour	Sec. 68-29	2 Hour	Sec. 68-28	3 Hour	Sec. 68-27	4 Hour	Sec. 68-26
METAL COLUMNS							
Concrete Units—Solid No Fill	2"	Concrete Units—Solid Concrete Units—Hollow	2" 2"	Concrete Units—Solid. Plastered Concrete Units—Hollow. Plastered Concrete Units—Hollow. 2 Units Thick, Staggered Joints Not Plastered Clay Tile Units—Hollow Plastered Clay Tile Units—Hollow 2 Units Thick, Staggered Joints Not Plastered	2" 3" 4" 3" 4"	Concrete Units—Solid. Plastered Concrete Units—Hollow. Plastered Concrete—Cast-in-Place Clay Tile Units—Hollow Plastered Brick Gypsum Cast-in-Place	3" 4" 3" 4" 3" 3"
Clay Tile Units—Hollow No Fill	2"	Clay Tile Units—Hollow	2"				
Plaster on Metal Lath. Port. cement, Lime, or Gypsum	1"	Brick Gypsum Units—Solid No Fill	2" 2"				
OTHER METAL MEMBERS							
		Concrete Cast-in-Place	1½"	Concrete Units—Solid Plastered Gypsum Units—Solid	2" 3" 3"	Concrete Cast-in-Place Concrete Units—Solid Plastered Concrete Units—Hollow Plastered Clay Tile Units—Hollow Plastered	2" 2" 3" 3" 3"
Plaster on Metal Lath. Port. cement, Lime, or Gypsum	1"	Gypsum Cast-in-Place	1½"	Concrete Units—Hollow. 2 units Thick, Staggered Joints Not Plastered Clay Tile Units—Hollow Plastered Clay Tile Units—Hollow 2 Units Thick, Staggered Joints Not Plastered	4" 2" 4"		
LONGITUDINAL REINFORCEMENT OF CONCRETE COLUMNS, BEAMS, GIRDERS, AND TRUSSES							
Concrete	1"					Concrete	1½"
REINFORCEMENT OF SLABS, JOISTS, AND WALLS							
		Concrete	¾"			Concrete	1"

## FIRE RESISTANCE—FLOORS—ROOFS—CEILINGS—CHICAGO BUILDING CODE—1939

1 Hour	2 Hour	3 Hour	4 Hour
Reinf. Conc. Slabs.....	Reinf. Conc. Slabs.....	Reinf. Conc. Slabs.....	Reinf. Conc. Slabs.....
Reinf. Conc. Joists.....	Reinf. Conc. Joists.....	Reinf. Conc. Joists.....	Reinf. Conc. Joists.....
With Filler Units of Hollow Tile, Concrete, Gypsum	With Filler Units of Hollow Tile, Concrete, Gypsum	With Filler Units of Hollow Tile, Concrete, Gypsum	With Filler Units of Hollow Tile, Concrete, Gypsum
Reinf. Conc. Joists Combined with Slab	Reinf. Conc. Joists Combined with Slab	Reinf. Conc. Joists Combined with Slab	Reinf. Conc. Joists Combined with Slab
Reinf. Gypsum Slabs.....	Reinf. Gypsum Slabs.....	Reinf. Gypsum Slabs.....	Reinf. Conc. Slabs.....
Roofs Only	Roofs Only	Roofs Only	Roofs Only
Steel Joists and Reinf. Conc.....	Steel Joists & Reinf. Conc.....	Solid Masonry Slabs.....	Solid Masonry Slabs.....
Metal Lath & Plast. Ceiling	Metal Lath & Plast. Ceiling	Solid Masonry Arches.....	Solid Masonry Arches.....
Steel Joists & Reinf. Gyp.....	Steel Joists & Reinf. Gyps.....	Hollow Tile Arches	Hollow Tile Arches
Metal Lath & Plast. Ceiling	Metal Lath & Plast. Ceiling	Flat, Plastered.....	Flat, Plastered.....
Roofs Only	Roofs Only	Segmental, Plastered.....	Segmental, Plastered.....
		Both With 2" Solid or Loose, Non-Combustible Fill	Both With 2" Solid or Loose, Non-Combustible Fill

REDUCTION OF SLAB THICKNESS:—For the purpose of fire resistive value only, in any floor or roof construction not required to have a protective ceiling on the underside thereof, the required slab thickness may be reduced one-half inch if a protective ceiling of metal lath and plaster is applied thereto. The total thickness of a non-combustible floor finish applied directly to the floor construction, or two-thirds of the thickness of a non-combustible floor fill where such fill is not required may be considered as part of required fireproof floor thickness. Minimum thickness cast-in-place Slabs 2½" Sec. 68-24.

## FIRE RESISTANCE—WALLS AND PARTITIONS—CHICAGO BUILDING CODE—1939

1 HOUR	Sec. 68-17	2 HOUR	Sec. 68-16	3 HOUR	Sec. 68-15	4 HOUR	Sec. 68-14
Brick.....	3 <sup>4</sup> "	Brick..... Plastered Both Sides	3 <sup>4</sup> "			Brick—Solid Wall.....	8"
Brick..... Plastered Both Sides	2 <sup>1</sup> "	Brick—Hollow Wall.....	8"			Brick—Hollow Wall..... 3 Continuous Vert. Withes or Plastered Both Sides	12"
Concrete—Plain.....	3"	Concrete, Reinf.....	4"	Concrete—Reinf.....	5"	Concrete—Reinf.....	8"
Concrete Units—Solid.....	3"	Concrete Units—Solid.....	6"	Concrete—Plain.....	7"	Concrete—Plain.....	6"
Concrete Units—Hollow.....	4"	Concrete Units—Hollow.....	8"	Concrete Units—Solid.....	8"	Concrete Units—Solid.....	8"
Concrete Units—Hollow..... Plastered Both Sides	3"	Concrete Units—Hollow..... Plastered Both Sides	4"	Concrete Units—Hollow.....	12"	Plastered 1 Side	12"
Clay Tile—Hollow.....	3 <sup>1</sup> "	Clay Tile—Hollow..... 3 Cells in Wall Width	8"	Concrete Units—Hollow..... 1 <sup>1</sup> / <sub>2</sub> " Outer Shell	8"	Concrete Units—Hollow..... Plastered Both Sides	8"
		Clay Tile—Hollow..... 2 Cells in Wall, Plast. 1 Side	8"	Clay Tile—Hollow..... 3 Cells in Wall Width	12"	Clay Tile—Hollow.....	12"
		Clay Tile—Hollow..... 2 Cells in Wall, Plastered 2 Sides	6"			2 Units, 3 Cells in Wall Width	
Clay Tile—Load Bearing..... Plastered Both Sides	3"						
Gypsum—Solid.....	3"					Clay Tile—Load Bearing..... 2 Cells—Plastered Both Sides	8"
Gypsum—Solid..... Plastered Both Sides	2"						
Gypsum Hollow.....	3"	Gypsum Hollow.....	3"	Gypsum—Hollow..... Single Units	8"		
		Plastered Both Sides	4"				
		Gypsum Cast-in-Place.....	4"				
Hollow Partitions { Combustible Studding or Non- Combustible Studding With Metal Lath & 2" Plast. With Gypsum Lath & 1" Plast. { Both Sides, Joints Cov. 3" Met. Lath		Plastered Partitions—Solid..... On Metal Studs & Metal Lath	2"	Faced Hollow Units..... Clay { Faced Concrete { Stone Gypsum { Concrete Terra Cotta	8"	Faced Hollow Units..... Clay { Faced Concrete { Concrete Gypsum { With Terra Cotta	12"

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## OF THE

# NEW CHICAGO

# BUILDING CODE

LIBRARY  
OF THE  
UNIVERSITY OF ILLINOIS

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48-10	802.02d	49-21	906.06b	50-53	1010.01	51-75	1106.05
48-11	802.02d-1	49-22	906.06c	50-54	1010.02	51-76	1106.06
48-12	802.02d-2	49-23	906.06d	50-55	1010.03	51-77	1106.07
48-13	802.02d-3	49-24	906.06e			51-78	1107.01
48-14	802.02c	49-25	906.07	51-1	1101.05	51-79	1107.11
48-15	802.02b	49-26	906.08a	51-2	1101.04	51-80	1107.12
48-16	802.02e	49-27	906.08b	51-3	1101.02	51-81	1107.02
48-17	802.02f	49-28	907.01	51-4	1101.03	51-82	1107.03
48-18	802.02g	49-29	907.02	51-5	1102.03	51-83	1107.04
48-19	802.02h	49-30	907.03	51-6	1102.01	51-84	1107.05
48-20	802.02i	49-31	908.01	51-7	1102.04	51-85	1107.06
48-21	802.02j	49-32	908.02	51-8	1102.02a	51-86	1107.07
48-22	802.02k	49-33	904.02	51-9	1102.02b	51-87	1107.08
48-23	802.02l	49-33	908.03a	51-10	1102.02c-1	51-88	1107.09
48-24	802.02n	49-34	908.03b&c	51-11	1102.02c-2	51-89	1107.10
48-25	803.01a	49-35	908.03d	51-12	1102.02d	51-90	1108.01
48-26	803.01b	49-36	909.01	51-13	1102.02e	51-91	1108.02
48-27	803.02a	49-37	909.02	51-14	1102.02f	51-92	1108.13
48-28	803.02b	49-38	—	51-15	1102.02g	51-93	1108.03
48-29	803.02c	49-39	—	51-16	1102.02h	51-94	1108.18
48-30	803.03a	49-40	910.01	51-17	1102.02i	51-95	1108.22

# OF THE UNIVERSITY OF ILLINOIS

NEW	ORIGINAL	NEW	ORIGINAL	NEW	ORIGINAL	NEW	ORIGINAL
51-96	1110.05	52-41	1209.01	53-72	1305.07g	53-153	1307.03f-2
51-97	1108.14	52-42	—	53-73	1305.07h	53-154	1307.03f-3
51-98	1108.04	52-43	1210.01	53-74	1305.07i-1	53-155	1307.03f-4
51-99	1108.21	52-44	1210.02a	53-75	1305.07i-2	53-156	1307.03f-5
51-100	1108.23	52-45	1210.02b	53-76	1305.07i-3	53-157	1307.03f-6
51-101	1108.07	52-46	1210.02c	53-77	1305.07i-4	53-158	1307.03f-7
51-102	1108.08			53-78	1305.07i-5	53-159	1307.03n
51-103	1108.09	53-1	1301.02	53-79	1305.07i-6	53-160	1307.03o
51-104	1108.10	53-2	1301.03a	53-80	1305.07i-7	53-161	1307.04a
51-105	1108.05	53-3	1301.03b	53-81	1305.07i-8	53-162	1307.04b
51-106	1108.06	53-4	1301.03c-1	53-82	1305.07i-9	53-163	1307.04c
51-107	1108.11	53-5	1301.03c-2	53-83	1305.07i-10	53-164	1307.05
51-108	1108.12	53-6	1301.03c-3	53-84	1305.07j-1	53-165	1307.06
51-109	1108.15	53-7	1301.03c-4	53-85	1305.07j-2	53-166	1307.07
51-110	1108.16	53-8	1301.03c-5	53-86	1305.07j-3	53-167	1307.08a
51-111	1108.17a	53-9	1301.04	53-87	1305.07j-4	53-168	1307.08b
51-112	1108.20	53-10	1301.06	53-88	1305.07j-5	53-169	1307.08c-1
51-113	1108.24	53-11	1301.05	53-89	1305.07j-6	53-169	1308.08c-2
51-114	1108.25a	53-12	1302.01	53-90	1305.07j-7	53-169	1307.08c-3
51-115	1110.04a	53-13	1302.02	53-91	1305.07j-8	53-170	1308.08c-4
51-116	1110.04b	53-14	1302.03	53-92	1305.06	53-171	1307.09
51-117	1110.04c	53-15	1302.04	53-93	1305.08	53-172	1307.10
51-118	1110.04d	53-16	1302.05a	53-94	1305.09a	53-173	1307.11
51-119	1110.06	53-17	1302.05b	53-95	1305.09b	53-174	1308.01a&b
51-120	1109.01	53-18	1302.06	53-96	1305.09c	53-175	1308.02
51-121	1109.02	53-19	1302.07	53-97	1305.09d	53-176	—
51-122	1109.03	53-20	1302.08	53-98	1305.09e	53-177	—
51-123		53-21	1302.09a	53-99	1305.10a	53-178	1309.04
51-124	1109.07	53-22	1302.09b	53-100	1305.10b-1	53-179	1309.01a
51-125	1109.10	53-23	1302.10a	53-101	1305.10b-2	53-180	1309.02a
51-126	1109.04	53-24	1302.10b	53-102	1305.10b-3	53-181	1309.01b-1
51-127	1109.05	53-25	1303.01	53-103	1305.10c-1	53-182	1309.01b-2
51-128	1109.06	53-26	1303.02a	53-104	1305.10c-2	53-183	1309.01b-3
51-129	1109.08	53-27	1302.03b	53-105	1305.11	53-184	1309.01b-4
51-130	1109.09	53-28	1303.02c	53-106	1305.12	53-185	1309.01b-5
51-131	1110.01	53-29	1303.03a	53-107	1305.13	53-186	1309.02b
51-132	1110.02	53-30	1303.03b	53-108	1305.14a	53-187	1309.03a
51-133	1110.03	53-31	1303.03c	53-109	1305.14b	53-188	1309.03b
51-134	1110.07	53-32	1303.04	53-110	1305.14c-1&2	53-189	1309.03c-1
		53-33	1303.05	53-111	1305.14c-3	53-190	1309.03c-2
52-1	1201.01	53-34	1303.06	53-112	1305.14d-1	53-191	1309.03c-3
52-2	1201.02	53-35	1303.07a&b	53-113	1305.14d-2	53-192	1309.03e
52-3	1201.03	53-36	1303.07c	53-114	1306.01a	53-193	1309.03d-1
52-4	1202.01	53-37	1303.07d	53-115	1306.01b	53-194	1309.03d-2
52-5	1202.02	53-38	1304.01	53-116	1306.02	53-195	1309.03d-3
52-6	1203.01a	53-39	1304.02	53-117	1306.04		
52-7	1203.01b	53-40	1304.03a	53-118	1306.03a	54-1	1401.04
52-8	1203.01c	53-41	1304.03b	53-119	1306.03b	54-2	1401.05
52-9	1203.01d	53-42	1304.03c	53-120	1306.03c	54-3	1401.02
52-10	1203.01e	53-43	1304.04	53-121	1306.03d	54-4	1401.06
52-11	1203.01f	53-44	1304.05	53-122	1306.03e&f	54-5	1402.01
52-12	1204.01a	53-45	1305.01	53-123	1306.03g	54-6	1402.02
52-13	1204.01b	53-46	1305.02a	53-124	1306.03h	54-7	1402.03
52-14	1204.01c	53-47	1305.02b	53-125	1306.03i	54-8	1402.04
52-15	1204.02	53-48	1305.02c	53-126	1306.03j	54-9	1403.01
52-16	1204.03	53-49	1305.02d	53-127	1306.03k	54-10	1403.02
52-17	1205.01	53-50	1305.03	53-128	1307.01a	54-11	1403.03
52-18	1205.02	53-51	1305.04	53-129	1307.01b	54-12	1403.04
52-19	1205.03c	53-52	1305.15	53-130	1307.01c	54-13	1401.03
52-20	1205.03b	53-53	1305.16	53-131	1307.01d	54-14	1403.05
52-21	1206.01	53-54	1305.05a-1	53-132	1307.01e	54-15	1403.07
52-22	1206.02a	53-55	1305.05a-2	53-133	1307.02	54-15	1404.03
52-23	1206.02b	53-56	1305.05a-3	53-134	1307.03m	54-16	1403.08
52-24	1206.02c	53-57	1305.05a-4	53-135	1307.03a	54-17	1403.09
52-25	1206.03a	53-58	1305.05a-5	53-136	1307.03b	54-18	1403.10
52-26	1206.03b	53-59	1305.05a-6	53-137	1307.03c	54-19	1404.05
52-27	1206.03c	53-60	1305.05b	53-138	1307.03d-1	54-20	1404.06
52-28	1206.03d	53-61	1305.05c	53-139	1307.03d-2	54-21	1404.07
52-29	1206.04a	53-62	1305.05d-1	53-140	1307.03d-3	54-22	1404.01
52-30	1206.04b	53-62	1305.05d-2	53-141	1307.03e-1	54-23	1403.06b
52-31	1204.04c	53-62	1305.05d-3	53-142	1307.03e-2	54-24	1403.06a
52-32	1206.04d	53-63	1305.05d-4	53-143	1307.03f	54-25	1404.02a
52-33	1206.05a	53-63	1305.05d-5	53-144	1307.03g	54-26	1404.02a-1
52-34	1206.05b	53-64	1305.05d-6	53-145	1307.03h	54-27	1404.02a-2
52-35	1207.01	53-65	1305.07a	53-146	1307.03i	54-28	1404.02a-3
52-36	1207.02a	53-66	1305.07b-1	53-147	1307.03j-1	54-29	1404.02b
52-37	1207.02b	53-67	1305.07b-2	53-148	1307.03j-2	54-30	1404.04
52-38	1208.01a	53-68	1305.07c	53-149	1307.03j-3	54-31	1405.01
52-39	1208.01b	53-69	1305.07d	53-150	1307.03k-1	54-32	1405.02
52-40	1208.01c	53-70	1305.07e	53-151	1307.03k-2	54-33	1406.01
		53-71	1305.07f	53-152	1307.03l-1	54-34	1406.02a

NEW	ORIGINAL	NEW	ORIGINAL	NEW	ORIGINAL	NEW	ORIGINAL
54-35	1406.02b	55-41	1506.04a	56-24	1606.04e	57-69	1708.09b
54-36	1406.03a&b	55-42	1506.04b	56-25	1606.04f	57-70	1708.02
54-37	1406.03c-1	55-43	1506.04c	56-26	1606.04g	57-71	1708.03a
54-38	1406.03c-2&3	55-44	1506.04d	56-27	1607.01	57-72	1708.03b
54-38	1406.03c-4	55-45	1506.04e	56-28	1607.02	57-73	1708.04a
54-39	1406.07	55-46	1506.05a	56-29	1607.03	57-74	1708.04b
54-40	1406.04a	55-47	1506.05b	56-30	1608.01	57-75	1708.04c
54-41	1406.04b	55-48	1506.05c	56-31	1608.02	57-76	1708.04d
54-42	1406.04c	55-49	1406.05d	56-32	1609.01	57-77	1708.05
54-43	1406.04d	55-50	1506.05e	56-33	1610.01	57-78	1709.01
54-44	1406.04e	55-51	1506.05f	56-34	1610.02	57-79	—
54-45	1406.04f	55-52	1506.05g	56-35	1610.03	57-80	1710.01
54-46	1406.04g	55-53	1506.06			57-81	1710.02
54-47	1406.05a	55-54	1506.07a	57-1	1701.03	57-82	1710.03
54-48	1406.05b	55-55	1506.07b	57-2	1701.04	57-83	1710.04
54-49	1406.05c	55-56	1506.07c	57-3	1701.05		
54-50	1406.05d	55-57	1506.07d	57-4	1701.02	58-1	1801.02
54-51	1406.05e	55-58	1506.07d-1	57-5	1701.06a	58-2	1802.01
54-52	1406.05f	55-59	1506.07d-2	57-6	1701.06b	58-3	1802.02a
54-53	1406.05g	55-60	1506.07d-3	57-7	1701.06c	58-4	1802.02b
54-54	1406.05h	55-61	1506.08a	57-8	1702.01	58-5	1802.03
54-55	1406.06a	55-62	1506.08b	57-9	1702.02	58-5	1802.04c
54-56	1406.06b	55-63	1506.08c	57-10	1703.01	58-6	1802.04a
54-57	1406.08a	55-64	1506.08d	57-11	1703.02	58-7	1802.04b
54-58	1406.08b	55-65	1506.09a	57-12	1703.03	58-8	1802.04d
54-59	1406.08c	55-66	1506.09b	57-13	1703.04	58-9	1802.05a
54-60	1406.08d	55-67	1506.09c	57-14	1703.05	58-10	1802.05b
54-61	1407.01	55-68	1506.09d	57-15	1703.06	58-11	1802.06
54-62	1407.02	55-69	1506.09e	57-16	1704.02a	58-12	1802.07
54-63	1408.01a	55-70	1506.09f	57-17	1704.02b	58-13	1802.07b-1
54-64	1408.01b	55-71	1506.10a	57-18	1704.02c	58-14	1802.07b-2
54-65	1408.01c	55-72	1506.10b	57-19	1704.02d	58-15	1802.07c
54-66	1408.02	55-73	1506.10c	57-20	1704.02e	58-16	1802.07d
54-67	1408.04	55-74	1506.11a	57-21	1704.02f	58-17	1802.08
54-68	1408.05	55-75	1506.11b	57-22	1704.01	58-18	1820.09a
54-69	1409.01	55-76	1506.13a	57-23	1704.03a	58-19	1802.09b
54-70	—	55-77	1506.13b	57-24	1704.03b	58-20	1803.01
54-71	1410.01	55-78	1506.13b	56-25	1704.04	58-21	1803.02
54-72	1410.02	55-79	1506.13c	57-26	1704.05	58-22	1803.03a
		55-80	1507.01	57-27	1704.06	58-23	1803.03b
55-1	1501.06	55-81	1507.02	57-28	1704.07	58-24	1803.03c
55-2	1501.02	55-82	1507.03	57-29	1705.01	58-25	1803.03d
55-3	1501.05	55-83	1507.04	57-30	1705.02	58-26	1803.03e
55-4	1501.07	55-84	1508.01a	57-31	1706.01a	58-27	1803.04b
55-5	1502.01	55-85	1508.01b	57-32	1706.01b	58-28	1803.04a
55-6	1502.02	55-86	1508.02	57-33	1706.02a	58-29	1803.04c-1
55-7	1503.01	55-87	1508.03	57-34	1706.02b	58-30	1803.04c-2
55-8	1503.02	55-88	1508.04	57-35	1706.02c	58-31	1803.04d
55-9	1503.03	55-89	1508.05	57-36	1706.02d	58-32	1803.04e
55-10	1501.03	55-90	1509.01	57-37	1706.03a	58-33	1803.05
55-11	1501.04	55-91	1509.02	57-38	1706.03b	58-34	1803.06a
55-12	1503.04	55-92	1509.03	57-39	1706.03c	58-35	1803.06b
55-13	1503.05	55-93	—	57-40	1706.03d	58-36	1804.01
55-14	1503.06	55-94	—	57-41	1706.03e	58-37	1804.02
55-15	1504.01	55-95	1510.01	57-42	1706.04	58-38	1804.03
55-15	1504.02a	55-96	1510.02	57-43	1706.05a	58-39	1804.04
55-16	1504.02b			57-44	1706.05b	58-40	1804.05
55-17	1504.02c	56-1	1601.03	57-45	1706.07a-1	58-41	1804.06
55-18	1504.02d	56-2	1601.04	57-46	1706.07a-2	58-42	1805.01
55-19	1504.02e	56-3	1602.01	57-47	1706.07a-3	58-43	1805.02
55-20	1504.02f	56-4	1603.01	57-48	1706.07a-4	58-44	1805.03
55-21	1504.03	56-5	1603.02	57-49	1706.07b	58-45	1805.04
55-22	1504.04	56-6	1603.03	57-50	1706.07c	58-46	1805.05
55-23	1504.05	56-7	1601.02	57-51	1706.07d	58-47	1806.01
55-24	1505.01	56-8	1601.01a	57-52	1706.09a	58-48	1806.02
55-25	1505.02	56-9	1601.01b	57-53	1706.09b	58-49	1806.03
55-26	1503.03	56-9	1604.02a	57-54	1706.09c	58-50	1806.04a
55-27	1506.01	56-10	1601.02b	57-55	1706.08	58-51	1806.04b
55-28	1506.02a	56-11	1604.02c	57-56	1706.10	58-52	1806.04c
55-29	1506.02b	56-12	1604.02d	57-57	1706.11	58-53	1806.04d
55-30	1506.02c	56-13	1604.02e	57-58	1706.06	58-54	1806.05a
55-31	1506.02d	56-14	1604.02f&g	57-59	1707.01	58-55	1806.05b
55-32	1506.02e	56-15	1604.02h	57-60	1707.02a	58-56	1806.05c
55-33	1506.12	56-16	1605.01	57-61	1707.02b	58-57	1806.05d
55-34	1506.03a	57-62	1605.02	57-62	1707.02c	58-58	1806.05e
55-35	1506.03b	56-18	1606.01	57-63	1707.02d	58-59	1807.01
55-36	1506.03c-1	56-19	1606.02	57-64	1707.02e	58-59	1807.02
55-37	1506.03c-2	56-20	1606.03	57-65	1707.03	58-60	1807.03
55-38	1506.03c-3	56-21	1606.04a	57-66	1707.04	58-61	1807.04
55-39	1506.03c-4	56-22	1606.04b	57-67	1707.05	58-62	1807.05
55-40	1506.03c-5	56-23	1606.04c	57-68	1708.01a	58-63	1808.01

NEW	ORIGINAL	NEW	ORIGINAL	NEW	ORIGINAL	NEW	ORIGINAL
58-64	1808.02a	61-43	2106.02b	64-3	2601.01c	65-4	2701.03b
58-65	1808.02b	61-44	2106.02c	64-4	2601.01d	65-5	2701.03c
58-66	1809.01	61-45	2106.02d	64-5	2601.01d	65-6	2702.05
58-67	1809.02	61-46	2106.03	64-6	2601.01e	65-7	2702.01
58-68	1809.03a	61-47	2106.04	64-7	2601.03	65-8	2702.02
58-69	1809.03b	61-48	2106.05	64-8	2601.04	65-9	2702.03
58-70	1809.04	61-49	2106.06	64-9	2601.05	65-10	2702.04a
58-71	1809.05	61-50	2106.07	64-10	2601.06	65-11	2702.04b
58-72	1809.06	61-51	2106.08	64-11	2601.07	65-12	2702.04c
58-73	1810.01	61-52	2107.01	64-12	2601.08	65-13	2702.04d
58-74	1810.02	61-53	2107.03	64-13	2601.09	65-14	2702.04e
58-75	1810.03	61-54	2107.04	64-14	2601.10	65-15	2702.04f
58-76	1810.04	61-55	2108.01	64-15	2601.02a&b	65-16	2702.05g
58-77	1810.05	61-56	2108.02	64-16	2601.02c-1	65-17	2702.04h
58-78	1810.06	61-57	2109.01	64-17	2601.02c-2	65-18	2702.04i
58-79	1811.01	61-58	2109.02	64-18	2601.02c-3	65-19	2702.04j
58-80	1811.02	61-59	2109.03	64-19	2601.02c-4	65-20	2702.04k
58-81	1811.03	61-60	2110.01a	64-20	2601.02c-5	65-21	2703.01
58-82	1812.01	61-61	2110.01b	64-21	2601.02c-6	65-22	2703.02
58-82	1812.02	61-62	2110.01c	64-22	2601.02d	65-23	2703.03
58-83	1812.04	61-63	2110.01d	64-23	2601.02e	65-24	2703.04
58-84	1812.05	61-64	2110.01e	64-24	2602.01a-1	65-25	2703.05a
58-85	1812.06	61-65	2110.01f	64-25	2602.01a-2	65-26	2703.05b
58-86	1813.01	61-66	2110.02	64-26	2602.01b-1	65-27	2703.05c
58-87	1813.02a	61-67	2110.03a	64-27	2602.01b-2	65-28	2703.05d
58-88	1813.02b	61-68	2210.03b-1	64-28	2602.01b-3	65-29	2703.05e
58-89	1813.02c	61-69	2110.03b-2	64-29	2602.01b-4		
58-90	1813.02d	61-70	2110.03b-3	64-30	2602.01c	66-1	3001.01
		61-71	2110.03c	64-31	2602.02a	66-2	3001.02
59-1	1901.01	61-72	2110.03d	64-32	2602.02b	66-3	3001.03
		61-73	2111.01a	64-33	2602.02c	66-4	3001.04
60-1	2001.01	61-74	2111.01b	64-34	2602.02d	66-5	3001.05a
60-2	2001.02a	61-75	2111.01c	64-35	2602.02e	66-6	3001.05b
60-3	2001.02b	61-76	2111.01d	64-36	2602.02f	66-7	3001.05c
60-4	2001.03	61-77	2111.01e	64-37	2602.02g	66-8	3001.05d
60-5	2002.01	61-78	2112.01	64-38	2602.02h	66-9	3001.05e
		61-79	2112.02a	64-39	2602.02i	66-10	3001.06a
61-1	2101.02a	61-80	2112.02b	64-40	2602.01a	66-11	3001.06b
61-2	2101.02b	61-81	2112.02c	64-41	2602.04b	66-12	3001.06c
61-3	2101.02c	61-82	2112.02d	64-42	2602.04c	66-13	3001.06d
61-4	2101.02d	61-83	2112.02e	64-43	2602.04d	66-14	3001.06e
61-5	2101.03	61-84	2113.01	64-44	2602.04e	66-15	3001.07a
61-6	2101.04	61-85	2113.02	64-45	2602.04f	66-16	3001.07b
61-6	2101.09a	61-86	2113.03	64-46	2602.04g	66-17	3001.07c
61-7	2101.05	61-87	2114.01a	64-47	2602.04h	66-18	3001.08
61-8	2101.06	61-88	2114.01b	64-48	2602.04j		
61-9	2101.07	61-89	2114.02	64-49	2602.04k	67-1	3101.01
61-10	2101.08	61-90	2115.01a	64-50	2602.04l	67-2	3101.02
61-11	2101.09b	61-91	2115.01b	64-51	2602.04m	67-3	3101.03
61-12	304.03	61-92	2116.01a	64-52	2603.01	67-4	3102.01
61-12	2101.10	61-93	2116.01b	64-53	2603.02a	67-5	3102.01c
61-13	2101.12a	61-94	2116.01c	64-54	2603.02b	67-6	3102.02a
61-14	2101.12b	61-95	2117.01	64-55	2603.02c	67-7	3102.02b
61-15	2101.12c	61-96	—	64-56	2603.02d	67-8	3102.03a
61-16	2101.12d	61-97	2117.02a	64-57	2603.02e	67-9	3102.03b
61-17	2102.01	61-98	2117.02b	64-58	2604.01	67-10	3102.03c
61-18	2102.02a	61-99	2117.02c	64-59	2605.01	67-11	3102.03d
61-19	2102.02b	61-100	2117.02d	64-60	2605.02	67-12	3102.04a
61-20	2102.02c	61-101	2118.01a	64-61	2605.03a	67-13	3102.04b
61-21	2103.01a	61-102	2118.01b	64-62	2605.03b	67-14	3102.04c
61-22	2103.01b			64-63	2605.03c	67-15	3102.05a
61-23	2103.01c	62-1	2401.01	64-64	2605.03d	67-16	3102.05b
61-24	2103.01d	62-2	2401.02a	64-65	2605.03e	67-17	3102.05c
61-25	2103.02a	62-3	2401.02b	64-66	2605.03f	67-18	3102.06
61-26	2103.02b	62-4	2401.03	64-67	2605.03g	67-19	3102.07
61-27	2103.02c	62-5	2401.04	64-68	2605.03h	67-20	3102.08
61-28	2103.02d	62-6	2402.01	64-69	2605.03i	67-21	3103.01
61-29	2103.02e	62-7	2402.02a	64-70	2605.03j	67-22	3103.01
61-30	2103.02f	62-8	2402.02b	64-71	2606.01a	67-23	3103.02a
61-31	2103.02g	62-9	2402.03	64-72	2606.01b	67-24	3103.02b
61-32	2103.02h			64-73	2606.01c	67-25	3103.03a
61-33	2103.02i	63-1	2501.01	64-74	2606.01d	67-26	3103.03b
61-34	2104.01	63-2	2501.02	64-75	2606.01e	67-27	3103.03c
61-35	2104.02a	63-3	2501.03	64-76	2606.01f	67-28	3103.03d
61-36	2104.02b	63-4	2501.04	64-77	2607.01a	67-29	3103.04a
61-37	2104.02c	63-5	2501.05	64-78	2607.01b	67-30	3103.01b
61-38	2104.03	63-6	2501.06	64-79	2607.01c	67-31	3103.04c
61-39	2105.01	63-7	2501.07			67-32	3103.05a
61-40	2105.02			65-1	2701.01	67-33	3103.05b
61-41	2106.01	64-1	2601.01a	65-2	2701.02	67-34	3103.05c
61-42	2106.02a	64-2	2601.01b	65-3	2701.03a	67-35	3103.06

NEW	ORIGINAL	NEW	ORIGINAL	NEW	ORIGINAL	NEW	ORIGINAL
67-36	3103.07	69-12	3302.03a&b	71-36	3504.01j	73-40	3804.07c
67-37	3103.08	69-13	3302.04	71-37	3504.01k	73-41	3804.07d
67-38	3104.01	69-14	3302.05	71-38	3501.01	73-42	3804.08
67-39	3104.02a	69-15	3302.06	71-39	3505.02a	73-43	3805.01a
67-40	3104.02b	69-16	3302.07	71-40	3505.02b	73-44	3805.01b
67-41	3104.03	69-17	3303.01a	71-41	3505.02c	73-45	3805.01c
67-42	3104.04	69-18	3303.01b	71-42	3505.03a	73-46	3801.05d
67-43	3104.05a	69-19	3303.02	71-43	3505.03b	73-47	3805.01e
67-44	3104.05b	69-20	3303.03	71-44	3505.03c	73-48	3805.02a
67-45	3104.05c	69-21	3303.04	71-45	3505.03d	73-49	3805.02b
67-46	3104.06	69-22	3303.05	71-46	3505.03e	73-50	3805.02c
67-47	3104.07	69-23	3303.06	71-47	3505.03f	73-51	3805.03
67-48	3104.08	69-24	3303.07	71-48	3506.01	73-52	3805.04
67-49	3105.01	69-25	3304.01	71-49	3506.02a	73-53	3805.05
67-50	3105.02	69-26	3305.01	71-50	3506.02b	73-54	3805.06
67-51	3105.03a	69-27	3306.01	71-51	3506.02c	73-55	3805.07
67-52	3105.03b	69-28	3306.02a	71-52	3506.02d	73-56	3805.08
67-53	3105.03c	69-29	3306.02b	71-53	3506.02e		
67-54	3104.04a	69-30	3307.01	71-54	3506.02f	74-1	3901.01a
67-55	3105.04b	69-31	3307.02	71-55	3506.03a	74-2	3901.01b
67-56	3105.04c			71-56	3506.03b	74-3	3902.01
67-57	3105.05	70-1	3401.01a	71-57	3506.03c	74-4	3902.02
67-58	3108.01	70-2	3401.01b	71-58	3507.01	74-5	3902.03a
67-59	3108.02a	70-3	3401.01c			74-6	3902.03b
67-60	3108.02b	70-4	3401.01cc	72-1	3601.01a	74-7	3902.04
67-61	3108.03a	70-5	3401.01d	72-2	3601.01b	74-8	3902.05
67-62	3108.03b	70-6	3401.02a&b	72-3	3601.02a	74-9	3902.06
67-63	3108.03c	70-7	3401.02c	72-4	3601.02b	74-10	3902.07a
67-64	3108.03d	70-8	3401.03	72-5	3601.02c&d&e	74-11	3902.07b
67-65	3108.03e	70-9	3461.04	72-6	3601.02f	74-12	3902.07c
67-66	3108.03f	70-10	3401.05	72-7	3601.03a	74-13	3902.07d
		70-11	3401.06a	72-8	3601.03b	74-14	3902.07e
68-1	3201.01	70-12	3401.06b	72-9	3601.03c	74-15	3902.08
68-2	3201.02	70-13	3401.06c	72-10	3601.03d	74-16	3902.09a
68-3	3201.03a	70-14	3401.06d	72-11	3601.03e	74-17	3902.09b
68-4	3201.03b	70-15	3401.06e	72-12	3601.03f	74-18	3902.09c
68-5	3201.03c	70-16	3401.06f	72-13	3601.03g	74-19	3902.09d
68-6	3201.03d	70-17	3401.07a	72-14	3601.04a	74-20	3902.09e
68-7	3201.03e	70-18	3401.07b	72-15	3601.04b	74-21	3902.09f
68-8	3201.03f	70-19	3402.02	72-16	3601.04c	74-22	3902.09g-1
68-9	3201.03g	70-20	3402.03a	72-17	3601.05	74-23	3902.09g-2
68-10	3201.03h	70-21	3402.03b			74-24	3902.09h
68-11	3201.03i	70-22	3403.02	73-1	3801.01	74-25	3902.10a
68-12	3201.03j	70-23	3403.03	73-2	3802.01a	74-26	3902.10b
68-13	3202.01a	70-24	3403.04	73-3	3802.01b	74-27	3902.11a
68-14	3202.01b			73-4	3802.02a&b	74-28	3902.11b
68-15	3202.01c	71-1	3501.01	73-5	3802.02c	74-29	3902.11c
68-16	3202.01d	71-2	3501.02	73-6	3802.03a	74-30	3902.11d
68-17	3202.01e	71-3	3501.03a&b	73-7	3802.03b		
68-18	3202.01f	71-4	3502.01	73-8	3802.03c	75-1	4001.01a
68-19	3202.02a	71-5	3502.02a	73-9	3802.03d	75-2	4001.01b
68-20	3202.02b	71-6	3502.02b	73-10	3802.04	75-3	4002.01
68-21	3202.02c	71-7	3502.02c	73-11	3802.05	75-4	4002.02a
68-22	3202.02d	71-8	3502.02d	73-12	3802.06	75-5	4002.02b
68-23	3202.02e	71-9	3502.03	73-13	3802.07	75-6	4002.02c
68-24	3202.02f	71-10	3503.01	73-14	3802.08a	75-7	4002.02d
68-25	3202.03a	71-11	3503.02a	73-15	3802.08b	75-8	4002.02e
68-26	3202.03b	71-12	3503.02b-1	73-16	3802.08c	75-9	4002.02f
68-27	3202.03c	71-13	3503.02b-2	73-17	3802.02d	75-10	4002.02g
68-28	3202.03d	71-14	3503.02b-3	73-18	3802.09	75-11	4003.01
68-29	3202.03e	71-15	3503.02c	73-19	3803.01	75-12	4003.02a
68-30	3202.04a	71-16	3503.02d	73-20	3803.02a	75-13	4003.02b
68-31	3202.04b	71-17	3503.02e-1	73-21	3803.02b	75-14	4003.02c
68-32	3202.05a	71-18	3503.02e-2	73-22	3803.02c	75-15	4003.02d
68-33	3202.05b	71-19	3503.02f	73-23	3803.03a	75-16	4003.02e
68-34	3202.05c	71-20	3503.02g	73-24	3803.03b	75-17	4003.03
68-35	3202.05d	71-21	3503.02h	73-25	3804.01a	75-18	4003.04
68-36	3202.05e	71-22	3503.02i	73-26	3804.01b	75-19	4004.01
68-37	3203.01	71-23	3503.02j	73-27	3804.01c		
		71-24	3503.02k	73-28	3804.02a	76-1	4101.01a
69-1	3301.01	71-25	3503.03a	73-29	3804.02b	76-2	4101.01b
69-2	3301.02	71-26	3503.03b	73-30	3804.02c	76-3	4101.01c
69-3	3301.03a	71-27	3504.01a	73-31	3804.02d&e	76-4	4101.02a
69-4	3301.03b	71-28	3504.01b	73-32	3804.03	76-5	4101.02b
69-5	3301.03c	71-29	3504.01c	73-33	3804.04	76-6	4101.02c
69-6	3301.03d	71-30	3504.01d	73-34	3804.05a	76-7	4101.02d
69-7	3301.03e	71-31	3504.01e	73-35	3804.05b	76-8	4102.01a
69-8	3301.03f	71-32	3504.01f	73-36	3804.05c	76-9	4102.01b
69-9	3301.03g	71-33	3501.01g	73-37	3804.06	76-10	4102.02
69-10	3302.01	71-34	3504.01h	73-38	3804.07a	76-11	4102.03
69-11	3302.02	71-35	3504.01i	73-39	3804.07b	76-12	4102.04a&b

NEW	ORIGINAL	NEW	ORIGINAL	NEW	ORIGINAL	NEW	ORIGINAL
76-13	4102.05a	79-39	4403.02c	79-120	4405.01	80-12	4603.03
76-14	4102.05b	79-40	4403.03a	79-121	4405.02	80-13	4603.04
76-15	4102.05c	79-41	4403.03a-1	79-122	4405.03a	80-14	4605.01
76-16	4102.05d	79-42	4403.03a-2	79-123	4405.03b	80-15	4605.01a
76-17	4102.06a	79-43	4403.03b	79-124	4405.03c	80-16	4605.01b
76-18	4102.06b	79-44	4403.03c	79-125	4405.03d	80-17	4605.02
76-19	4102.06c	79-45	4403.03d	79-126	4405.03e	80-18	4605.03
76-20	4102.06d	79-46	4403.03e	79-127	4405.03f	80-19	4605.04
76-21	4102.06e	79-47	4403.04	79-128	4405.04a	80-20	4606.01
76-22	4102.06ee	79-48	4403.05a	79-129	4405.04b	80-21	4604.02
76-23	4102.06f	79-49	4403.05b	79-130	4405.04c	80-22	4606.03
76-24	4102.06g	79-50	4403.05c	79-131	4405.05a	80-23	4606.04
76-25	4102.06h	79-51	4403.05d	79-132	4405.05b	80-24	4607.01
76-26	4102.06i	79-52	4403.05e	79-133	4405.06	80-25	4608.01
76-27	4102.06j	79-53	4403.05f	79-134	4406.01	80-26	4609.01
76-28	4102.06k	79-54	4403.05g	79-135	4406.02	80-27	4609.02
		79-55	4403.05h	79-136	4406.03		
77-1	4201.01	79-56	4403.05i	79-137	4406.03a	81-1	4701.01a
77-2	4201.02a	79-57	4403.05j	79-138	4406.03b	81-2	201.24
77-3	4201.02b	79-58	4403.06	79-139	4406.03c	81-2	4701.01b&c
77-4	4201.03a	79-59	4403.07	79-140	4406.03d	81-3	4701.02
77-5	4201.03b	79-60	4403.08	79-141	4406.03e	81-4	4701.03
77-6	4201.03c	79-61	4403.09a	79-142	4406.04	81-5	4701.04
77-7	4203.01	79-62	4403.09b	79-143	4407.01	81-6	4702.01
77-8	4203.02	79-63	4403.09c	79-144	4407.02a	81-7	4702.02
77-9	4203.03	79-64	4403.09d	79-145	4407.02b	81-8	4702.03
77-10	4203.04	79-65	4403.09e	79-146	4407.02c	81-9	4702.04
		79-66	4403.09f	79-147	4407.02d	81-10	4702.05
78-1	4301.01a	79-67	4403.10a	79-148	4407.02e	81-11	4702.06
78-2	4301.01b	79-68	4403.10b	79-149	4407.03a	81-12	4702.07a&b
78-3	4301.01c	79-69	4403.10c	79-150	4407.03b	81-13	4702.08
78-4	4301.02a	79-70	4403.10d	79-151	4407.03c	81-14	4702.09
78-5	4301.02b	79-71	4403.10e	79-152	4407.03d	81-15	4703.01
78-6	4301.03	79-72	4403.10f	79-153	4408.01a	81-16	4703.02
78-7	4301.04	79-73	4403.10g	79-154	4408.01b	81-17	4703.03
78-8	4301.05	79-74	4403.11a	79-155	4408.01c	81-18	4703.04
78-9	4301.06a	79-75	4403.11b	79-156	4408.01d	81-19	4704.01
78-10	4301.06b	79-76	4403.11c	79-157	4408.01e	81-20	4704.02
78-11	4301.06c	79-77	4403.11d	79-158	4408.01f	81-21	4704.02
78-12	4301.06d	79-78	4403.11e	79-159	4408.01g	81-22	4704.03
78-13	4301.07a	79-79	4403.11f	79-160	4408.01h	81-23	4704.04
78-14	4301.07b	79-80	4403.12a	79-161	4408.01i	81-24	4704.05
		79-81	4403.12b	79-162	4408.04	81-25	4704.06
79-1	4401.01	79-82	4403.12c	79-163	4408.04a	81-26	4705.01
79-2	4401.02	79-83	4403.12d	79-164	4408.04b		
79-3	4410.01a	79-84	4403.13a	79-165	4408.04c	82-1	4801.01
79-4	4410.01b	79-85	4403.13b	79-166	4408.04d	82-1	201.23
79-5	4402.01	79-86	4403.13c	79-167	4408.04e	82-2	4801.02
79-6	4402.02	79-87	4403.13d	79-168	4408.05	82-3	4801.03
79-7	4402.03	79-88	4403.13e	79-169	4408.05a	82-4	4801.04
79-8	4402.04	79-89	4403.13e-1	79-170	4408.05b	82-5	4801.05
79-9	4402.05	79-90	4403.13e-2	79-171	4408.05b-1	82-6	4801.06a&b
79-10	4402.06	79-91	4403.13e-3	79-172	4408.05b-2	82-7	A4701.16
79-11	4402.07	79-92	4403.14	79-173	4408.05b-3	82-8	A4701.17
79-12	4402.08	79-93	4403.14a	79-174	4408.05c	82-9	4801.06c
79-13	4402.09	79-94	4403.14b	79-175	4408.07	82-10	4810.01
79-14	4402.10a	79-95	4403.14c	79-176	4408.07a	82-11	4812.01
79-15	4402.10b	79-96	4403.14d	79-177	4408.07b	82-12	4802.01
79-16	4402.10c	79-97	4403.15	79-178	4408.07c	82-13	4802.02
79-17	4402.10d	79-98	4403.15a	79-179	4408.07d	82-14	4802.03a&b
79-18	4402.10e	79-99	4403.15b	79-180	4408.06	82-15	4802.03c
79-19	4402.11a	79-100	4403.15c	79-181	4408.02	82-16	4802.04
79-20	4402.11b	79-101	4403.15d	79-182	4408.03	82-17	4802.05
79-21	4402.11c	79-102	4403.15e	79-183	4409.01	82-18	4802.06
79-22	4402.12a	79-103	4403.15f	79-184	4409.09a	82-19	4802.07
79-23	4402.12b	79-104	4403.15g	79-185	4409.01b	82-20	4803.01
79-24	4402.12c	79-105	4403.15h	79-186	4409.01c	82-21	4803.02
79-25	4402.13	79-106	4403.15i	79-187	4409.02	82-22	4803.03a
79-26	4402.13a	79-107	4403.15j	79-188	4410.01c	82-23	4803.03b
79-27	4402.13b	79-108	4403.15k			82-24	4803.03c
79-28	4402.13c	79-109	4403.15l	80-1	4601.01	82-25	4803.03d
79-29	4402.13d	79-110	4403.16	80-2	4601.02	82-26	4803.03e
79-30	4402.14	79-111	4403.17	80-3	4601.03	82-27	4803.03f
79-31	4402.14a	79-112	4403.17a	80-4	4604.01	82-28	4803.03g
79-32	4402.14b	79-113	4403.17b	80-5	4602.02a	82-29	4803.03h
79-33	4402.15	79-114	4403.17c	80-6	4602.02b	82-30	4803.03i
79-34	4402.16	79-115	4403.17d	80-7	4602.02c	82-31	4803.03j
79-35	4402.17	79-116	4403.17d-1	80-8	1108.26	82-32	4803.03k
79-36	4403.01	79-117	4403.17d-2	80-9	4602.03	82-33	4803.04
79-37	4403.02a	79-118	4403.18	80-10	4603.01	82-34	4803.05
79-38	4403.02b	79-119	4404.01	80-11	4603.02	82-35	4803.06a

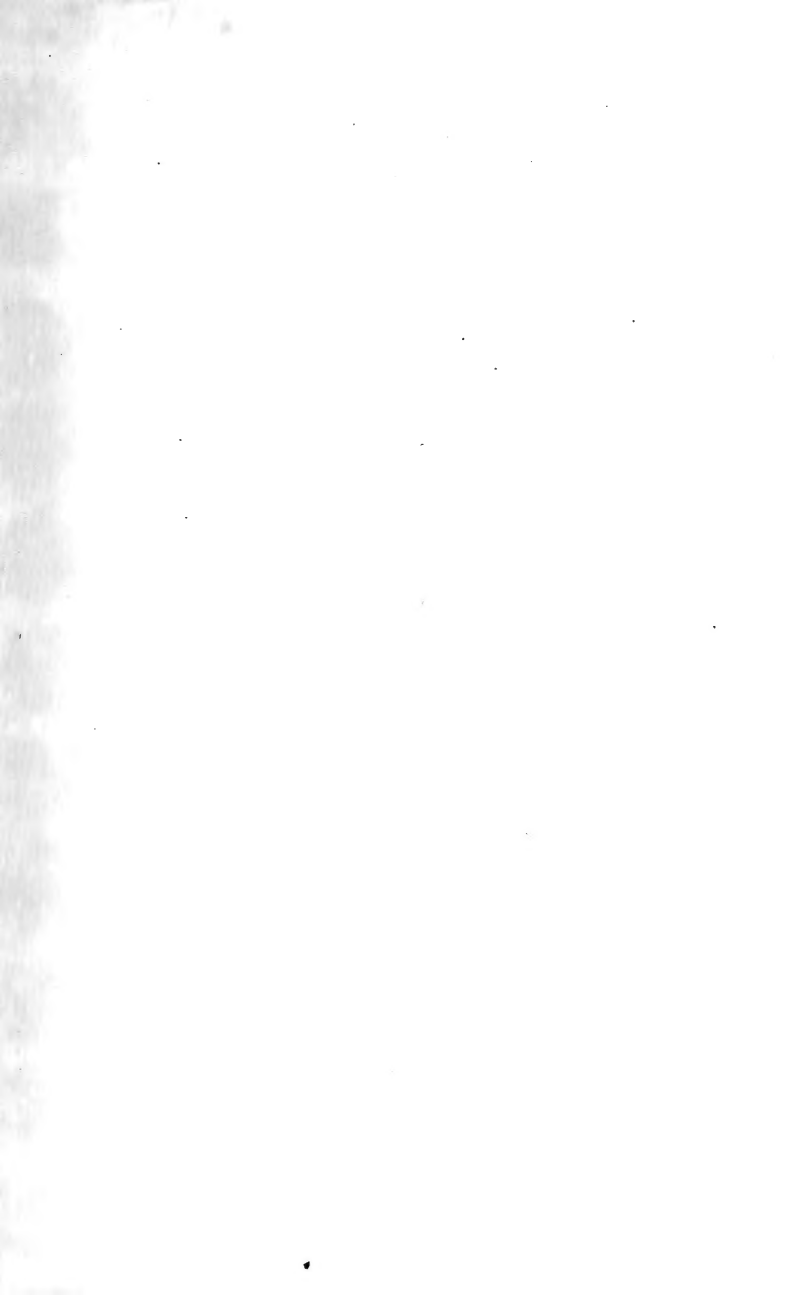
NEW	ORIGINAL	NEW	ORIGINAL	NEW	ORIGINAL	NEW	ORIGINAL
82-36	4803.06b	82-116	4808.06	83-41	4901.41	85-36	5303.05a
82-37	4803.06c	82-117	4808.07	83-42	4901.42	85-37	5303.05b
82-38	4803.07	82-118	4808.08	83-43	4901.43	85-38	5303.05c
82-39	4803.08a	82-119	4808.09	83-44	4901.44	85-39	5303.05d
82-40	4803.08b	82-120	4808.10	83-45	4901.45	85-40	5303.05e
82-41	4803.09	48-121	4808.11	83-46	4901.46	85-41	5303.05f
82-42	4803.10	48-122	4808.12	83-47	4901.47	85-41	5303.05g
82-43	4804.01a	48-123	4808.13	83-48	4901.49	85-42	5303.05h
82-44	4804.01b	48-124	4808.14	83-49	4901.50	85-43	5303.06a
82-45	4804.01c	48-125	4808.15	83-50	4901.51	85-44	5303.06b
82-46	4804.02	48-126	4808.16	83-51	4901.52	85-45	5303.06b-1
82-47	4804.03	48-127	4808.17	83-52	4901.53	85-46	5303.06c
82-48	4804.04a	48-128	4808.18	83-53	4901.54	85-47	5303.06c
82-49	4804.04b	48-129	4809.01	83-54	4901.55	85-48	5303.06d
82-50	4804.05	48-130	4809.02	83-55	4901.56	85-49	5303.06e
82-51	4804.06a	48-131	4809.03	83-56	4901.57	85-50	5303.06e
82-52	4804.06b	48-132	4809.04	83-57	4901.58	85-51	5304.01
82-53	4804.06c	48-133	4809.05	83-58	4901.59a	85-52	5304.02
82-54	4804.06d	48-134	4809.06	83-58	4901.59b&c	85-53	5304.03
82-55	4804.07a	48-135	4809.07	83-59	4901.59d	85-54	5304.04
82-56	4804.07b	48-136	4809.08	83-60	4901.60	85-55	5304.04
82-57	4804.07c	48-137	4809.09	83-61	4901.61	85-56	5304.04
82-58	4804.08	82-138	4809.10	83-62	4902.62	85-57	5304.04
82-59	4804.09	82-139	4809.11	83-63	4901.63	85-58	5304.05
82-60	4804.10	82-140	4809.12	83-64	4901.64	85-59	5304.06a
82-61	4805.01a	82-141	4809.13	83-65	4901.65	85-60	5304.06a
82-62	4805.01b	82-142	4809.14	83-66	4901.66	85-61	5304.06b
82-63	4805.02a	82-143	4809.15a	83-67	4901.67	85-62	5304.06c
82-64	4805.02b	82-144	4809.15b	83-68	4901.68	85-63	5304.06d
82-65	4805.02c	82-145	4809.15c	83-69	4901.69	85-64	5304.06e
82-66	4805.03	82-146	4809.15d	83-70	4901.70	85-65	5304.06f
82-67	4805.04	82-147	4809.15e			85-66	5304.06g
82-68	4805.05	82-148	4811.01a	84-1	5101.01a	85-67	5304.06h
82-69	4806.01	82-149	4811.01b	84-1	5201.01	85-68	5304.06i
82-70	4806.02	82-150	4811.01c	84-2	5201.02	85-69	5304.06j
82-71	4806.03	82-151	4811.01d	84-3	5202.01	85-70	5304.06k
82-72	4806.04a	82-152	4811.01e	84-4	5203.01	85-71	5102.01b
82-73	4806.04b	82-153	4802.08	84-5	5102.01	85-72	5305.01a
82-74	4806.05			84-5	5102.01a	85-73	5305.01b
82-75	4806.06	83-1	4901.01	84-6	5102.02a	85-74	5102.04
82-76	4806.07	83-2	4901.02	84-7	5102.02b	85-75	5101.04
82-77	4806.08a	83-3	4901.03	84-8	5101.04	85-75	5102.04a
82-78	4806.08b	83-4	4901.04	84-9	5102.05	85-76	5102.04
82-79	4806.09	83-5	4901.05	84-10	5102.03	85-77	5102.05
82-80	4806.10	83-6	4901.06			85-78	5102.03
82-81	4806.11	83-7	4901.07	85-1	5101.01a	86-1	201.22
82-82	4806.12	83-8	4901.08	85-2	5301.01	89-1	5401.01
82-83	4806.13	83-9	4901.09	85-3	5306.01	89-1	5402.01
82-84	4806.14	83-10	4901.10	85-4	5303.07	89-2	5401.02
82-85	4806.15	83-11	4901.11	85-5	5305.02	89-3	5402.02
82-86	4806.16	83-12	4901.11½	85-6	5305.03	89-4	5402.03
82-87	4806.17	83-13	4901.12	85-7	5302.01		
82-88	4806.18	83-14	4901.13	85-8	5302.02		
82-89	4806.19	83-15	4901.14	85-9	5303.01a		
82-90	4806.20	83-16	4901.15	85-10	5303.01b		
82-91	4806.21	83-17	4901.16	85-11	5303.01c	90-27	1103.10a
82-92	4806.22	83-18	4901.17	85-12	5303.01d		
82-93	4806.23	83-19	4901.19	85-13	5303.01e	92-4	404.15
82-94	4806.24	83-20	4901.20	85-14	5303.01f		
82-95	4807.01	83-21	4901.21	85-15	5303.02a	121-8	1103.04b
82-96	4807.02	83-22	4901.18	85-16	5303.02b		
82-97	4807.03	83-22	4901.22	85-17	5303.02c	125-16	1103.12b
82-98	4807.04	83-23	4901.23	85-18	5303.02d		
82-99	4807.05	83-24	4901.24	85-19	5303.02e	129-30	1108.19
82-100	4807.06	83-25	4901.25	85-20	5303.02f	129-31	401.18a
82-101	4807.07	83-26	4901.26	85-21	5303.02f	129-32	401.18b
82-102	4807.08	83-27	4901.27	85-22	5303.03	129-33	403.07
82-103	4807.09	83-28	4901.28	85-23	5303.03	129-34	403.07
82-104	4807.10	83-29	4901.29	85-24	5303.03	129-35	403.07
82-105	4807.11	83-30	4901.30	85-25	5303.03	129-36	403.07
82-106	4807.12	83-31	4901.31	85-26	5303.03	129-61	1103.15a
82-107	4807.13	83-32	4901.32	85-27	5303.04	129-62	1108.17a
82-108	4807.14	83-33	4901.33	85-28	5303.04	129-62	1103.15a
82-109	4807.15	83-34	4901.34	85-29	5303.04	129-65	1103.14a
82-110	4807.16	83-35	4901.35	85-30	5303.04	129-69	1103.03b
82-111	4808.01	83-36	4901.36	85-31	5303.04	129-71	1103.09a
82-112	4808.02	83-37	4901.37	85-32	5303.04		
82-113	4808.03	83-38	4901.38	85-33	5303.04		
82-114	4808.04	83-39	4901.39	85-34	5303.04	175-1	5103.01
82-115	4808.05	83-40	4901.40	85-35	5303.04	175-2	5103.01











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